

Final Environmental Assessment

Hanscom Air Force Base

Massachusetts

Replace Hanscom AFB Middle School



U.S. AIR FORCE

Prepared by:

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LIST OF ACRONYMS

ABG	Air Base Group	JFHQ	Joint Force Headquarters
AFB	Air Force Base	kV	Kilovolt
AFI	Air Force Instruction	kWh	Kilowatt-hour
AFRL	Air Force Research Lab	LEED	Leadership in Energy and Environmental Design
AT/FP	Antiterrorism/Force Protection	MAARNG	Massachusetts Army National Guard
BMP	Best Management Practice	MAANG	Massachusetts Air National Guard
CEQ	Council on Environmental Quality	MassDEP	Massachusetts Department of Environmental Protection
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	Massport	Massachusetts Port Authority
CFR	Code of Federal Regulations	MCF	Million cubic feet
CO	Carbon Monoxide	MCP	Massachusetts Contingency Plan
DoD	Department of Defense	mgd	Million gallons per day
DoDEA	Department of Defense Education Activity	MHC	Massachusetts Historic Commission
EA	Environmental Assessment	MWRA	Massachusetts Water Resource Authority
EMCS	Energy Management Control System	NEPA	National Environmental Policy Act
ESC	Electronic Systems Center	NHESP	Natural Heritage and Endangered Species Program
FEMA	Federal Emergency Management Agency	NOx	Nitrous Oxide
FIRM	Federal Insurance Rate Map	Pb	Lead
gpm	Gallons per minute	PM	Particulate Matter
HARM	Hazard Assessment Rating Methodology	POV	Personal Occupancy Vehicle
ICP	Integrated Contingency Plan	RACT	Reasonably Available Control Technology
IRP	Installation Restoration Program		

RFTA	Reserve Forces Training Area	US EPA	United States Environmental Protection Agency
SAPS	Satellite Accumulation Points		
SF	Square feet	USGBC	United States Green Building Council
SIP	State Implementation Plan		
SO ₂	Sulfur dioxide	VOC	Volatile Organic Carbons

FINDING OF NO SIGNIFICANT IMPACT

Name of Action: Replace Hanscom AFB Middle School

Hanscom Air Force Base (AFB) proposes to replace the existing Hanscom Middle School. The proposed action includes the construction of a 85,000SF, two story building along with associated site improvements, including paving, parking, and utilities to accommodate 310 students from 4th through 8th grade. The project site location contains the existing Middle School along with the existing Primary School. Shared spaces, like cafeteria seating and the central receiving area, will need to remain operational until the new school is brought on line. This creates the need for phased construction. Phased building demolition of the existing Middle School would also be required in order to accommodate both the new construction and ongoing school operations. Also, temporary swing space facilities would be required during construction and deconstructed after completion of the proposed action. Facilities would be designed in accordance with DoDEA Education Facilities Specifications, Americans with Disabilities Act Accessibility (ADA) Guidelines, National Fire Protection Association Life Safety Code, Standards of Seismic Safety for Federally Owned Buildings, and energy and water conservation standards. Sustainable design would be integrated into the design in accordance with Leadership in Energy and Environmental Design (LEED) for Schools Silver criteria. The proposed action would also comply with Executive Order 13514 (Federal Leadership in Environmental, Energy, and Economic Performance) and Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings.

The Environmental Assessment (EA) prepared to replace the Hanscom AFB Middle School addresses the site specific replacement of the Hanscom AFB Middle School at the site of the existing Middle School. The Replace the Hanscom AFB Middle School EA evaluates the consequences of the proposed action on both the natural and man-made environments. The proposed action can have a positive and cohesive impact on Hanscom's education activities.

Once the new Middle School is fully operational, the area will continue to be designated as Community-Service.

The proposed action and the no-action alternative were analyzed in detail in the Replace the Hanscom AFB Middle School EA. The no-action alternative does not to meet the needs of Hanscom AFB. The no-action alternative was determined to be unreasonable because of NFPA Life Safety and ADA code violations, along with a failure to meet the standards of the DoDEA Educational Facilities Specifications. In addition, the no-action alternative fails to meet many of the Antiterrorism/Force Protection AT/FP requirements. The existing conditions of the Middle School negatively impact the quality of education for the students.

If the proposed action was to occur, no significant impact associated with land use, socioeconomics, transportation, noise, air quality, geology/soils, surface water/groundwater, floodplains, biological resources, cultural resources, hazardous waste, or the environmental restoration program would be anticipated. Minor impacts, however, may occur in the short-term. The construction, demolition and site restoration activities have potential to affect adjacent land uses due to elevated noise levels, increased dust, minor interferences with roadway access, and visual effects. The construction of the new Middle School would create construction and demolition debris, and may cause minor soil and groundwater disturbance. Smaller trees and shrubs may be cleared incidental to other demolition activities. Existing grassy vegetation related to the “swing space” area is also likely to be disturbed. The short-term loss of some vegetation is not anticipated to substantially impact the biological community on, or in the vicinity of, the proposed action’s site.

While some environmental impacts would result from this project, they are expected to be minor. The anticipated short-term construction impacts are not atypical compared with other routine construction projects. Additionally, Hanscom AFB has undertaken, or will employ, a number of pro-active measures to reduce the project’s potential impact to the environment. The new facility will qualify for certification under the Leadership in Energy and Environmental Design (LEED)

Green Building System, reflecting Hanscom AFB's commitment to being environmentally responsible and providing a healthy work atmosphere. With the incorporation of LEED technologies in the building, and the continued emphasis by Hanscom AFB on "reduce, reuse, recycle", it is expected that the new Middle School will operate more efficiently and use fewer resources than the building it replaces. Therefore, all impacts are insignificant and can be minimized further by using the best management practices described in the Replace the Hanscom AFB Middle School EA.

The proposed action would yield many positive impacts. First, the construction of the Middle School would result in a positive impact on Hanscom's education program. It would also create short-term business in the local construction industry as well as with local suppliers of equipment and office furniture. Another benefit is that as construction employees utilize local businesses, more revenue is generated in the short term. The proposed action would result in a long-term positive impact to wetlands, surface water, and groundwater. This is due to decreases in impervious surface and better drainage design at the middle school site. As a result, there will be higher infiltration rates, and thus the total volume of storm water runoff from the site will be reduced, protecting the headwaters of the Shawsheen River.

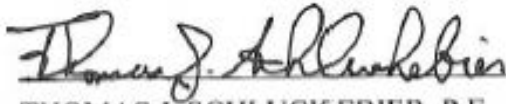
It is anticipated that the following best management practices (BMPs) would be used during the replacement of the Middle School at the existing site. All equipment and vehicles used during the proposed action would be maintained in good operating condition so exhaust emissions are minimized, thus reducing the potential for air quality impacts. Dust would be controlled onsite by using water to wet down disturbed areas. Sedimentation controls would be installed to minimize offsite runoff that may contain suspended solids. Disturbed areas will be seeded and stabilized as soon as possible to reduce erosion of disturbed soil with controls left in place until vegetation is established. The remaining mature trees will have protective barriers placed around them to minimize the potential for damage. Most of the landscape plants/trees will remain in place, and damage to plants would be minimized during the demolition stage. Approval from the Lincoln Conservation Commission and working in accordance with their Order of Conditions is required. Drainage design must meet Massachusetts Stormwater Management Standards, as well

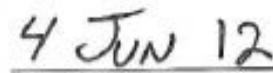
as comply with the Clean Water Act. During demolition, all activities will be conducted in accordance with Hanscom AFB's BMPs to prevent adverse effects to receiving waters. Also, all hazardous materials used during construction would be handled and disposed of in accordance with Hanscom AFB policies and protocols and all applicable state and federal regulations.

Copies of the Draft Replace the Hanscom AFB Middle School EA/FONSI were made available for public review at the main public libraries in Bedford, Concord, Lexington, and Lincoln, and at the Hanscom AFB Environmental Office, Building 1825, beginning on 11 August, 2011. Thirty days were allowed for the public to comment on the Draft EA/FONSI. The public comment period ended on 9 September, 2011 and no comments were received.

In December, 2011, the environmental office at Hanscom AFB discovered that the site description in section 2.2.2 of the draft EA described the proposed site as "within a floodplain." AFI32-7064 and E.O. 11988 define a floodplain as: "lowland and relatively flat areas adjoining inland and coastal water including flood prone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year." In section 3.9 of the draft EA, a cited Hanscom AFB Massachusetts: Educational Facilities Site Suitability Analysis prepared by the Army Corp of Engineers (COE) in 2005 stated that FEMA classifies the site as in flood area "Zone C". In July, 2011 the FEMA maps were revised. In December, 2011, the environmental office accessed flood maps on the FEMA website and the site of the proposed action was classified as in flood area "Zone X (unshaded)." On the FEMA website, "The areas of minimal flood hazard, which are the areas outside the [Special Flood Hazard Area] SFHA and higher than the elevation of the 0.2-percent-annual-chance flood, are labeled Zone C or Zone X (unshaded)." Therefore, the proposed site is not within a floodplain. This does not change the determination that the proposed action will not significantly impact floodplains.

Based on the detailed description of effects described in the Replace the Hanscom AFB Middle School Environmental Assessment for this proposed action, I have determined that the proposed action to replace the Middle School at the existing site would not have a significant impact on the natural or human environment.


THOMAS J. SCHLUCKEBIER, P.E.
Base Civil Engineer


Date

Section 1. Purpose of and Need for the Proposed Action

1.1. Introduction

There are currently two school facilities, a Primary and Middle School, on Hanscom AFB. The Hanscom Primary and Middle Schools are one story masonry veneer buildings originally constructed in 1958 with multiple subsequent additions. A major renovation addition to the Primary School occurred in 1988. The Hanscom Primary School serves grades from K through 3rd and the Hanscom Middle School houses students in grades 4th through 8th. There are existing uses in both buildings that are shared between the Middle School and the Primary School, such as cafeteria seating and the central receiving area. Also, they share a gymnasium, a 7,700 sq. ft. building originally constructed in 1965.

Both facilities were determined to exhibit progressive deterioration of exterior wall finishes, roofing and roofing components, finishes, and mechanical, plumbing and electrical systems. Utilizing Department of Defense recapitalization guidelines, facility condition requirements and modified recapitalization measures resulting from an evaluation of probable costs to correct physical deficiencies, both facilities should be considered for replacement. However, the Primary School is considered to be in better overall condition due to the major renovation that was completed in 1988. The condition of the Middle School is impacting the quality of education for the students. Yearly maintenance and utility costs will continue to increase and the school will continue to struggle to perform their mission in a limited capacity due to the inadequate and undersized facilities. The proposed action is to replace the Hanscom Middle School at the existing location.

This Environmental Assessment (EA) addresses the Proposed Action and the No-Action Alternative in accordance with the National Environmental Policy Act (NEPA) (42 United States Code [USC] 4321-4347), Council on Environmental Quality (CEQ, 1978) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] §§ 1500-1508), and 32 CFR 989 et seq., *Environmental Impact Analysis Process* (formerly known as Air Force Instruction [AFI] 32-7061). NEPA procedures were established to ensure

environmental information is available to public officials and citizens before decisions are made and before actions are taken.

According to these instructions, the environmental assessment is a written analysis which serves to (1) provide analysis sufficient to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI); and (2) aid federal agencies in complying with NEPA when no EIS is required. If this EA were to determine the proposed action would significantly degrade the environment, significantly threaten public health or safety, or generate significant public controversy, then an EIS would be completed. An EIS involves a comprehensive assessment of project impacts and alternatives, as well as a high degree of public input. Alternatively, if this EA results in a FONSI, then the action would not be the subject of an EIS. The EA is not intended to be a scientific document. The level and extent of detail and analysis in the EA is commensurate with the importance of the environmental issues involved and with the information needs of both the decision-makers and the general public.

This EA addresses the site-specific impacts of the replacement of the Middle School and associated demolition of existing structures, and evaluates the consequences of the proposed action and alternatives on the natural and man-made environments.

1.2. Purpose of and Need for the Proposed Action

The purpose of the proposed action is to provide adequate academic facilities for students in grades 4 through 8 on Hanscom AFB. The proposed action is needed because the existing facilities are in failing condition and are rated as Q4, the lowest possible facility rating. Existing classroom and education spaces are dispersed across the school grounds. Walking between many school areas requires walking outdoors which is not advantageous during the winter in Massachusetts. Inefficiencies due to travel times to these dispersed locations can be observed as students travel between classrooms, the dining facility and other activities. Additionally,

undersized classrooms, inadequate facilities, and poorly configured buildings further reduce efficiency and fail to meet the standards of the DoDEA Educational Facilities Specifications.

Water infiltration has caused classrooms to be shut down and has also caused ongoing roof repairs and floor replacements. Aging utility infrastructure systems result in excessive maintenance costs. The infrastructure has suffered due to a lack of required repair and maintenance, and has exceeded its useful life. There are numerous NFPA Life Safety and ADA code violations, no fire suppression systems, and the facilities do not meet construction energy efficiency standards. The bathrooms and plumbing are in severe need of renovation. Moreover, numerous maintenance and repair problems have developed, and are becoming beyond repair. The existing facilities also do not meet many of the AT/FP requirements.

Continued use of unsafe, inadequate, and undersized facilities will continue to impair the overall educational program for students. There will be an increase in enrollment at Hanscom AFB due to the anticipated increase in the number of families living on base resulting from the scheduled completion of base housing construction and renovation. If new facilities are not provided, the school will be undersized and provide a substandard environment that will continue to hamper the educational process.

Section 2. Description of the Proposed Action and Alternatives

2.1. *Proposed Action*

The proposed action is to replace the existing Hanscom Middle School. The project includes the construction of an 85,000SF, two story building along with associated site improvements which include paving, parking, and utilities in order to accommodate 310 students from 4th through 8th grade. The site where the project is located contains the existing Middle School along with the existing Primary School. There are existing uses in both buildings that are shared between the Middle School and the Primary School. The most prominent shared feature is the food service including cafeteria seating and the central receiving area, which is part of the existing Middle School. These spaces will need to remain operational until the new school is brought on line, which creates the need for phased construction on this project. The proposed action would be anticipated to be completed in two phases of construction over two consecutive school calendar years.

The proposed action will include the construction of general purpose classrooms, a gymnasium, an information center, a computer lab, science labs, supply areas, specialist rooms, a music room, an art room, a learning impaired room, teacher work rooms, counseling areas, storage offices, administrative offices, and other required areas for a fully functioning facility. Additionally, related infrastructure such as parking areas, mechanical rooms, delivery areas, and playgrounds will be addressed in the proposed action. Site improvements include signage, fencing, paving, landscaping, covered walkways, exterior lighting and utilities.

The proposed action would require the demolition of existing buildings and supporting facilities at the Hanscom Middle School. Phased building demolition will be required to accommodate new construction without interrupting school operations. The new school will be placed on the site of the existing Middle School grounds, creating the need for “swing space” to house the Middle School students temporarily while the new school is under construction. The temporary swing space facilities will be provided during construction and will be deconstructed after completion of the proposed action. Facilities will be designed in accordance with DoDEA

Education Facilities Specifications, Americans with Disabilities Act Accessibility Guidelines, National Fire Protection Association Life Safety Code, Standards of Seismic Safety for Federally Owned Buildings, and energy and water conservation standards. Sustainable design will be integrated into the design in accordance with Leadership in Energy and Environmental Design (LEED) for Schools Silver criteria.

2.2. Alternatives

Hanscom AFB is evaluating two options to replace the Hanscom Middle School: 1) Replace the Middle School at the existing site; and 2) take no further action and thereby continuing operating the Middle School in the existing conditions.

Options analyzed in detail in this EA include:

- Option 1 is the Preferred Alternative, and thus the Proposed Action evaluated in this EA.
- Option 2 is the No-action Alternative, and is described in more detail below.

2.2.1. No-Action Alternative

The Council on Environmental Quality's (CEQ) regulations implementing NEPA requires that a no-action alternative be evaluated. The no-action alternative maintains the status quo. Under the no-action alternative, the Middle School would remain in its current location and there would be no modifications to either the facility or its current use profile. The no-action alternative was determined unreasonable because of the NFPA Life Safety and ADA code violations, and failure to meet the standards of the DoDEA Educational Facilities Specifications. In addition, the no-action alternative does not meet many of the AT/FP requirements. The no-action alternative would greatly impact the quality of education for the students and does not meet the purpose and need of the project.

2.2.2. Alternative 1 - Preferred Alternative – Existing Site

Under the proposed action, the Middle School would be constructed on the existing school campus located on Marrett Street and adjacent to the Shawsheen River and ball fields. The 16.70 acre site provides an adequately sized area and is the site of the existing Primary and Middle School. The flat site has vegetated areas or tree stands noted on the property mainly in one of the areas adjacent to the Shawsheen River. The site is adjacent to the Child Development Center on the southwest corner, as well as the Youth Center and playground areas on the north and west sides of the property. The Nellis Terrace Housing area is adjacent to the southeast boundary of the property. There is a presence of wetlands, primarily on the western side of the site. The Shawsheen River is found on the western boundary of the site, and the river's RPA (Resource Protection Area) coverage may impact the site's buildable area. The site is located within a floodplain. The preferred alternative is analyzed in detail in this EA.

2.3. Alternatives Eliminated from Detailed Analysis

The following alternatives for the proposed Middle School were identified and underwent a preliminary evaluation. Renovation of the Middle School was considered in a condition survey conducted in 2004 explained below. Replacing the Middle School at the Colonial Place/Scott Circle or Randolph Road sites, as well as the site of the proposed action was evaluated in site suitability analysis study completed in 2005. The site suitability criteria used in the 2005 study ranked each site on a scale of 1 to 5 (5 most preferable) on 22 criteria based on construction, environmental, and installation factors. The site of the proposed action scored considerably higher than the other two alternatives. Below summarizes environmental concerns and current base conditions for the alternatives, and explains why they are not considered reasonable alternatives and have been eliminated from detailed analysis in this EA.

2.3.1. Renovation of Middle School

The existing Middle School includes undersized classrooms, inadequate facilities, and poorly configured buildings that reduce efficiency and fail to meet the standards of the DoDEA Educational Facilities Specifications. If new facilities are not provided, the school will be

undersized and provide a substandard environment that will continue to hamper the educational process. Based on a condition survey conducted in May 2004, the existing middle school was determined to exhibit progressive deterioration of exterior wall finishes, roofing and roofing components, finishes, and mechanical, plumbing and electrical systems anticipated for buildings of its age. Utilizing Department of Defense recapitalization guidelines, facility condition indices and modified recapitalization measures resulting from an evaluation of probable costs to correct physical deficiencies, the Middle School should not be considered for renovation (HAFB 2004). Renovation of the Middle School does not meet the need and the purpose of the proposed action. For these reasons, renovation of the Middle School is not a reasonable alternative and is eliminated from further detailed analysis in this EA.

2.3.2. Colonial Place/Scott Circle

The site is a 15.52 acre parcel adjacent to the Scott Circle housing area on the west, and the Child Development Center (Building 1994- CDC) on the east. This a flat site with major forested area to the west. The site is not directly accessible to any major thoroughfare. Currently used as an open field/play area with athletic fields and an ice hockey rink. Wetland areas are observed on the northeast corner and the western boundary of the property. This would restrict the developable area of the site. The relatively flat site has a presence of wetland soils, specifically Swansea muck, in an area north of Scott Circle. The site also contains an old landfill and is considered to be archeologically sensitive (COE, 2005). For these reasons, this alternative was eliminated from further detailed analysis in this EA.

2.3.3. Randolph Road

This site is bounded on the south by Randolph Road, on the east by Grenier Street, and Marrett Street on the west. The site slopes upward from Marrett Street with low points observed on the western boundaries adjacent to Marrett Street. The majority of the site is covered with trees and is adjacent to a dormitory complex on the north, the former Air Force Research Laboratories (AFRL) Phillips Lab Area on the south, and the Base Heating Plant on the east. A small stream in a low point (a tributary to the Shawsheen River) could contribute to a seasonal pond area

during rainfall seasons. The site's topography contain moderate to steep slopes (down from Grenier Street to Randolph Road) and is estimated to be in excess of an 8% slope. Soil conditions may pose some limitations to the construction of dwellings and small commercial buildings. The wooded area within the site is also considered as archeological sensitivity zone. Approximately 30% of the site area (on the northeast corner of the site) is within the 600-foot evacuation zone radius from a munitions storage facility (Building 1208) (COE, 2005). In addition, the site area is currently the site of the new construction of the Massachusetts National Guard Joint Force Headquarters (JFHQ) Facility. For these reasons, the Randolph Road alternative was eliminated from further detailed analysis in this EA.

Section 3. Applicable Federal Laws and Regulations

- Archaeological Resources Protection Act
- Clean Air Act
- Clean Water Act
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Endangered Species Act of 1973
- Executive Order (EO) 11990 (Protection of Wetlands)
- EO 11988 (Floodplain Management)
- EO 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations)
- EO 13514 (Federal Leadership in Environmental, Energy, and Economic Performance)
- Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings
- National Historic Preservation Act (NEPA)
- Occupational Safety and Health Administration (OSHA) Regulations
- Pollution Prevention Act of 1990
- Resource Conservation and Recovery Act (RCRA)
- Rivers and Harbors Act
- Toxic Substances Control Act (TSCA) of 1970

Section 4. Required Federal, State, and Local Permits

- (NPDES) General Permit for Stormwater Discharges from Construction Activities
- Order of Conditions from Lincoln Conservation Commission
- MassDEP BWP AQ 06 – Notification Prior to Construction or Demolition
- Massachusetts Asbestos Notification Form
- Hanscom Digging Permit

Section 5. Agencies and Persons Consulted

The Hanscom AFB environmental office consulted with the Massachusetts Historical Commission (MHC) and Minute Man National Historical Park during the preparation this EA. Letters and emails regarding consultation are included in Section 9.

A draft Replace the Hanscom AFB Middle School EA/FONSI was made available for public review at the main public libraries in Bedford, Concord, Lexington, and Lincoln, and at the Hanscom AFB Environmental Office, Building 1825, beginning on 11 August, 2011. Thirty days were allowed for the public to comment on the Draft EA/FONSI. The public comment period ended on 9 September, 2011 and no comments were received. A public notice was published in each of these towns' newspapers, including Hanscom AFB.

Section 6. Affected Environment

6.1. *Land Use*

Hanscom AFB is located approximately 18 miles northwest of Boston, Massachusetts, just outside the Route 128/I-95 circumferential limited-access highway. The base is located just west of a major light industrial and office park corridor along the limited-access highway. Hanscom AFB, which occupies approximately 846 acres, is situated in the Towns of Bedford, Lexington, and Lincoln, all of which are primarily suburban residential communities. Adjacent to the base is the Hanscom Field, an airport owned and operated by the Massachusetts Port Authority (Massport), part of which is located in the town of Concord to the west, as well as the Minute Man National Historic Park which is located to the south.

The existing school site is designated for Community-Service use. The western and southern portions of the site are designated for Outdoor Recreation and Open Space use respectively. The southeast boundary of the site is adjacent to the Nellis Terrace Housing area. To the north and east of the site are areas designated for Outdoor Recreation and Community Service use (the Hanscom Child Development Center (CDC)). On the opposite side of Marrett Street is an Outdoor Recreation (ball field) area.

6.2. *Socioeconomic Conditions*

Hanscom AFB serves primarily as the Headquarters of the U.S. Air Force Electronics Systems Center (ESC), which manages the development and acquisition of electronic command and control systems. The host unit on Hanscom AFB is the 66th Air Base Group (66 ABG), which is part of ESC. The 66 ABG provides services to all the active-duty, Reserve, and National Guard military personnel, Department of Defense (DoD) civilians and contractors who work and live at Hanscom AFB. Additionally, the 66 ABG supports over 100,000 retired military personnel, annuitants, and spouses living in the seven-state area of New England and New York. Hanscom AFB is also home to a number of "associate" units separate from ESC; the largest of these are the

Sensors and Space Vehicles directorates of the Air Force Research Laboratory (AFRL), which perform research and development services (HAFB, 2009) Beginning in 2011, AFRL is scheduled to relocate to Kirkland AFB and Wright-Patterson AFB.

The workforce at Hanscom AFB includes military (active-duty), government civilian, and contractors. ESC's acquisition function represents approximately half of the 7,763-strong workforce. Hanscom AFB's annual budget approaches \$3.3 billion. The government (military and civilian) payroll is approximately \$265.9 million. (HAFB, 2009).

6.3. Occupational Safety and Health

All government organizations on Hanscom AFB are provided industrial hygiene support by the Bioenvironmental office (66 MDS/SDOJ). The Public Health office (66MDS/SGOL) provides support for occupational health training, and organizes and manages the Occupational and Environmental Health Working Group (OEHWG). The OEHWG is chaired by physicians from Flight Medicine. Flight Medicine handles occupational physicals (including audiograms) and work related injury care for government workers. Contractor operations on Hanscom AFB are not supported by the base occupational health programs (i.e., Bioenvironmental Engineering, Public Health, and Occupational Medicine). Contractors are required to manage their own occupational health programs including industrial hygiene surveillance, worker health and safety training, hazard abatement, and medical surveillance.

All government organizations on Hanscom AFB and geographically separated units are provided occupational and non-occupational safety support by the 66 ABG Safety office. Support includes Ground, Weapons, and Flight safety programs. Major mishap prevention programs include inspections, hazard abatement, mishap investigation, and training. Safety is also the steward for the base Environmental, Safety, and Occupational Health Council and the Commander's OSHA Voluntary Protection Program. Contractor operations on Hanscom AFB are required to manage their own safety programs including hazard abatement, mishap reporting and recording, and safety training.

All contracts for major construction must follow the base civil engineering design review process, and the base Bioenvironmental and Safety offices are included in the process. While it would be the responsibility of the awarded contractor(s) to ensure the safety and health of contractor employees and others at the work site, this process ensures that applicable safety and health requirements are included in the final drawings and specifications for major construction contracts.

6.4. Utilities

6.4.1. Water Supply

Nearly the entire potable water supply to Hanscom AFB is provided by the Town of Lexington, through a 10-inch main along Hartwell Avenue and a 12-inch main along Wood Street. Lexington receives its water from the Massachusetts Water Resources Authority (MWRA), for which the Quabbin Reservoir serves as the primary source of water. Water demand at Hanscom AFB has shown a decreasing trend since the late 1980s, attributable both to a decrease in personnel on base, and the implementation of conservation measures. The quantity of water that Hanscom AFB can draw from Lexington is limited by contractual agreement to 2 million gallons per day (mgd). However, Hanscom AFB's annual water demand rarely exceeds one-third of the permitted allocation (HAFB, 2003a).

The Base is implementing measures to address complaints about rust colored water due to an aging distribution system. Replacement water distribution systems have been installed in housing areas along Ent Road, Hickham Lane, Hill Terrace, Nellis Terrace, and Poe Terrace. New drinking water pressure reducing valve vaults were installed at the Hartwell Avenue Gate and Randolph Loop. A new water main was installed on Kirtland Street to the club and temporary housing facilities. The Base is continuing to replace older cement asbestos pipes with ductile iron pipes for all water mains. (COE, 2005)

The existing Middle School site is currently fed by two water mains entering the site from Marrett Street near the northeast corner of the site and from Ent Road along the southern portion

of the site. The main from Marrett Street consists of an 8-inch diameter cast iron pipe extended from a 6-inch diameter cast iron pipe in Marrett Street. The main from Ent Road consists of an 8-inch cast iron pipe extended off an 8-inch cast iron pipe and 8-inch asbestos concrete pipe. Once the mains enter the existing school area, they form a loop around the existing Primary and Middle School buildings. (COE, 2005)

6.4.2. Wastewater

Hanscom AFB discharges sanitary sewage into the MWRA system via two pumping stations. The wastewater is conveyed via a 12-inch force-main down Hartwell Avenue and connects to a 20-inch force main from the Town of Bedford. The capacity of the wastewater line is limited to 1,500 gallons per minute (gpm) or 2.16 million gallons per day, by an agreement with the Town of Bedford and the MWRA. This is because of limitations at Bedford's Great Road Pumping Station. Wastewater flows from Hanscom AFB generally have averaged slightly more than half this maximum permitted capacity (HAFB, 2003a).

The existing Primary and Middle Schools are served by four sewer connections to the Base collection system. Within the existing site's area, flow from the existing schools is collected in a network of 8-inch diameter pipes and manholes and combined with flow from the Base Housing Area at a manhole located in the southern area of the existing school parking lot. The sewer main from the Base Housing Area is a ten-inch diameter main, and the main from the Base Housing and the schools remains a ten-inch diameter main until the intersection of Arnold Street and Marrett Street, located approximately 1,250 feet north of the site. At that point the sewer main increases to a twelve-inch diameter main. (COE, 2005)

6.4.3. Solid Waste

Approximately 83 tons of solid wastes are generated each week by Hanscom AFB. Some of this material is reused on base, but the majority is removed from Hanscom AFB by private contractors and disposed of by incineration or directly hauled to materials recovery facilities for recycling. The major sources of waste include community operations, offices, and industrial areas. The types of solid waste generated include food, various grades of office paper, newspaper, cardboard, cans, glass and plastic containers, scrap metals, as well as significant quantities of yard waste and construction and demolition debris. On an annual basis, Hanscom AFB generates approximately 1,555 tons of municipal solid waste and 318 tons of construction and demolition wastes, both of which are incinerated off-base with heat recovery or recycled. Additional materials diverted from the waste stream on an annual basis include: 160 tons of wood waste (pallets, packaging), 1,995 tons of compost/organic materials (tree trunks), 77 tons of metals, 179 tons of general recyclables, and 15 tons of computers/electronics (HAFB, 2010g).

6.4.4. Electricity

Hanscom AFB obtains its power from NSTAR (formerly Boston Edison). Nearly all transmission lines within Hanscom AFB are underground. The annual capacity is approximately 151 million kilowatt hours (kWh) (HAFB, 2003). Hanscom AFB has implemented a base wide Energy Management Control System (EMCS), which includes monitoring and control of energy use. For example, the heat temperature is turned down when buildings are vacant (e.g. overnight) and is turned up approximately one hour before the building becomes occupied (e.g. during regular daytime working hours). More than 85% of the office building space on Hanscom AFB is connected to the EMCS. Smart local controls have been implemented in a portion of the remaining facilities. Backup and emergency power is supplied by approximately 34 stationary emergency generators and 9 mobile generators located throughout the base.

Hanscom AFB currently receives power commodity from Hess. The transmission and distribution provider is NSTAR. FY08 annual electric power consumption at Hanscom AFB was approximately 54,800,000 kilo-watt (kW). Hanscom AFB's electrical service is provided at

14.4-kilovolts (kV) through three sets of 500-thousand-circular-mil (kcmil or MCM) EPR cables to the Base substation. At the Base perimeter, near the Small Business Office (Building 1101) and the AFRL (Gate 2), a manhole is located where responsibility for the electrical system shifts from NSTAR (the transmission and distribution (T&D) provider) and Hess (the commodity provider) to Hanscom AFB. All primary feeds are contained within a concrete encased conduit, 75% of which is under pavement. (HAFB, 2010d) Electric power is supplied to the existing Primary and Middle Schools underground from the existing electric distribution infrastructure in Ent Street. The Middle School is connected to the EMCS. There are no emergency generators at the Middle School.

6.4.5. Telecommunications

In addition to standard dial-up telephone service, Hanscom AFB has a fiber optic backbone cable that provides services to all base facilities. All telecommunication lines are below ground. Most inter-building communications cable on base is installed via a Manhole/Conduit system. Less than 10% is Direct Buried and there is no 'Aerial' system located on base. All mission facilities have an appropriate number of phone lines and fiber optic cabling installed to meet the needs of the users within that facility. (HAFB, 2011)

6.4.6. Natural Gas

Hanscom AFB is provided natural gas through an 8-inch high pressure main. Interruptible natural gas is provided to the central heating plant as a backup fuel for the production of steam and chilled water. Firm-supply natural gas is provided to base housing for domestic hot water heaters, gas ranges and dryers. Additionally, natural gas is consumed by various other facilities on base including the CDC, the Officer's Club, swimming pool, clinic (Building 1900), the Primary and Middle Schools. For CY2009, the total natural gas usage at Hanscom AFB was 827,905.57 million cubic feet (MCF). Annual natural gas capacity is 884,040 MCF. (HAFB, 2010c)

The existing Primary and Middle School buildings are serviced by two (2) two-inch gas services that are fed off of a six-inch gas main in Ent Road. Assuming that the gas load from the proposed new school building is not significantly greater than the current load, construction of the new building on this site could be fed from the same or relocated services. We note that a 24" gas transmission line traverses the southern edge of the site area, off of the south edge of the existing school parking lot area. Record plans indicate that the transmission main is located only 6" below the existing grade. Any construction in the vicinity of the transmission main will require careful consideration to ensure that the main is protected. (COE, 2005)

6.4.7. *Steam*

The Hanscom AFB central heating plant provides process steam to MIT Lincoln Labs and steam heat to more than 80 percent of the base facilities (excluding the privatized housing) through 39,000 linear feet of steam lines. The central heating plant, which was constructed in 1951, has four water tube type boilers. Originally rated at approximately 53,000 pounds per hour (pph) steam output each, these boilers were rebuilt and de-rated to 40,000 pph each in 1987. Based on recent testing, in their current condition the actual output of these boilers is between 31,000 and 35,000 pph each. All four boilers have dual fuel capability and utilize #6 fuel oil as the primary fuel and natural gas as a backup fuel source in accordance with the facility's Clean Air Act Title V air permit. High demand heating in severe winter conditions occasionally requires operation of all four boilers at or near maximum capacity. U.S. Air Force policy is to have N+1 capacity, or the ability to meet peak demand with one boiler offline. Currently, the central heating plant cannot meet this requirement; however, several rehabilitation projects are currently being planned which will restore system capacity. (HAFB, 2010c) For those buildings on Hanscom AFB which are not connected to the central heat plant, their source of heat includes small oil-fired steam and hot water boilers, electric rooftop units, heat pumps, and a number of small gas, propane, waste oil, or fuel oil-fired unit heaters in mechanical rooms and garages. In addition, some buildings on base are heated with natural gas. The existing Middle School is not connected to the central heat plant and its source of heat is from natural gas services that are fed off of a gas main in Ent Road. (COE, 2005)

6.5. Transportation

Traffic congestion in the vicinity of the base primarily occurs in the peak morning period as workers arrive from the local and regional highway system. Hanscom AFB commuters primarily use Route 2A and Route 4/225 to access Hanscom Drive and Hartwell Avenue to enter the base. Both of these state routes interchange with the Route 128/I-95 beltway that rings the Boston area and connects to other radial limited-access highways. These routes are also used by commuters from the area towns, as well as others accessing the many industrial and office parks in the area.

Vehicular traffic enters Hanscom AFB via one of three control points (a fourth gate is closed):

- Wood Street Gate - direct access to MIT Lincoln Laboratory (on-base) as well as the rest of the base; connects to Hartwell Avenue on the north and to Massachusetts Avenue on the south.
- Barksdale Gate (Hartwell Gate) – accessed via Hartwell Avenue, which provides direct access to Routes 4/225 and Route 128/I-95.
- Vandenberg Gate - the main gate for visitors, commercial vehicles, and many DoD personnel; access is from Route 2A, Hanscom Drive, and a segment of Old Bedford Road

Over 70% of the morning traffic entering the base uses the two eastern gates (Wood Street and Barksdale). Despite having the lowest traffic counts, Vandenberg Gate still experiences traffic queuing. Visitors and trucks must stop at the gate or the adjacent visitors' center for pass clearances to enter the base.

The road network on Hanscom AFB consists of arterials, collectors, and local streets. The major arterials include:

- Barksdale Street from the Vandenberg Gate to Eglin Street,
- Eglin Street from Barksdale Street to Vandenberg Drive,
- Vandenberg Drive from Vandenberg Gate to Marrett Street,
- Marrett Street from Vandenberg Drive to Barksdale Street.

Only personnel living on base can attend the Middle School (no other Lincoln school district students can attend). Most students walk or ride bikes from base housing to school. A few parents drop off and pickup their children, and several Special Education (SPED) vans transport children to and from the school and base housing. There are several after school functions/facilities where kids would walk to locations other than back home, including the youth center to the north and the Child Development Center across the bridge to the west. Vehicle access to the existing middle school is from Marrett Street. A sidewalk on the west side of Marrett Street provides pedestrian access to the existing middle school.

6.6. Noise

The primary sources of noise in the vicinity of Hanscom AFB result from normal operation of Massport's Hanscom Field airport, military flight operations at Hanscom AFB, and automobile traffic along the limited-access highway (Route 128/I-95) and various local roads. Even though military flight operations constitute approximately 1% of the total aircraft operations in the vicinity, military flight operations tend to employ noisier aircrafts and therefore, Massport calculates that military flight operations represent 11% of the aircraft-generated noise (HAFB, 2003a).

Ground-based vehicle operations at Hanscom AFB consist mainly of privately-owned vehicles and government vehicles. The privately-owned cars are used by regular daily employees and contractors. Government-owned vehicles include on-road maintenance and utility vehicles and off-road equipment, such as sweeper vacuums, cranes, lawn mowers, and forklifts (HAFB, 2003a). Noise generated independent of aircraft flight and noise on Hanscom AFB, such as maintenance and shop operations, ground traffic, and construction, is generally comparable to the noise generated in the surrounding community; therefore, noise generated during aircraft flight operations represents the most substantial noise source on the base.

6.7. Air Quality

Hanscom AFB is located in an attainment/unclassifiable area for the following criteria pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and particulate

matter (PM10 and PM2.5). However, the entire state of Massachusetts is designated by the US EPA as non-attainment for ozone (MassDEP, 2007). Ozone results from photochemical reactions in the atmosphere involving precursor pollutants such as Volatile Organic Compounds (VOCs) and nitrogen oxides (NOx). In 1997, the US EPA established a stricter ozone standard of 0.08 ppm averaged over an 8-hour period, but implementation was delayed due to legal challenges to the standard. The US EPA designated Massachusetts as “moderate nonattainment” for the 8-hour standard effective June 2004. The Massachusetts Department of Environmental Protection (MassDEP) is developing an 8-hour Ozone State Implementation Plan (SIP) which includes strategies for achieving an attainment status for the 8-hour ozone standard by 2010. Currently the US EPA has proposed to lower the 8-hour Ozone standard to between 0.06 and 0.07 ppm averaged over an 8-hour period. Although there have been numerous legal challenges to this proposed change, the US EPA expects to promulgate a final regulation for ground level Ozone some time in 2011. Should these new standards be implemented, most of Massachusetts will likely be reclassified as severe non-attainment, requiring a revised SIP by MassDEP.

The primary stationary emission sources at Hanscom AFB are the boilers at the central heating plant. Emissions from these boilers are regulated under Title V of the Clean Air Act Amendments. Because of the ozone non-attainment status, Hanscom AFB utilizes low NOx burners and performs annual NOx Reasonably Available Control Technology (RACT) testing of these boilers. The base’s Title V permit also imposes monitoring and record keeping requirements for various “emission units”, such as the heat plant, but also for large emergency generators, gas-driven chillers, aboveground and underground storage tanks, and fuel dispensing equipment. Future activities that would generate additional VOC or NOx emissions will be subject to stringent permit limits and associated emission reduction strategies. The current Title V Permit for Hanscom AFB is effective from 9 October 2008 to 9 October 2013. Of the approximately 43 emergency generators located on-base, 5 exceed the 300 kW threshold and are listed as individual emission units in the Title V permit; the remainder of the generators are considered insignificant sources and bundled together for purposes of estimating emissions. (HAFB, 2010c) The heating systems at the Primary and Middle Schools are operated by

Lincoln, and are not under control of Hanscom AFB. Therefore, emissions of the Middle School are not part of the Title V Permit for Hanscom AFB.

The primary mobile sources of emissions in the vicinity include aircraft operation at Massport's Hanscom Field, along with ground vehicles on local and/or base roadways and small combustion engines (e.g. lawn mowers, leaf blowers).

6.8. *Geology and Soils*

6.8.1. *Geology*

Hanscom AFB is located in an area that was occupied by a Pleistocene-age lake known as Glacial Lake Concord. The series of rounded hills and valleys that exist in the area are the result of bedrock structure and glacial erosion. Exposed areas of bedrock are found in the highly elevated outlying areas. Most of Hanscom AFB is underlain by the Andover granite, with a portion of the northeast part of the Base underlain by the Assabet quartz diorite and the Shawsheen gneiss. The present extent of Glacial Lake Concord deposits outlines the lower elevated area in which Hanscom AFB is situated. The glaciolacustrine (lake bed sediments) that formed the bottom of Glacial Lake Concord were evenly distributed over thousands of years, creating little topographic relief. Buildings and facilities located along Barksdale Street and Vandenberg Drive are built on these lake bed deposits. (HAFB, 2010a)

6.8.2. *Soils*

The soils at Hanscom AFB have been substantially disrupted by construction and earth-moving activities. The Soil Conservation Service Interim Report for Middlesex County (March 1991) identifies most of the soils on the base as a combination of Udorthents (soils altered by earthmoving activities) and/or Urban Lane (soils mostly covered by impervious surfaces). The majority of the remaining soils on base (outside the housing area) are loamy sands or fine sandy loams associated with glaciofluvial deposits. (HAFB, 2010a)

6.9. Surface Water and Groundwater

6.9.1. Surface Water

The headwaters of the Shawsheen River, a tributary to the Merrimack River, are located on Hanscom AFB. Runoff flows north through a culvert near the intersection of Marrett Street and Vandenberg Drive, and flows along the eastern edge of Massport's airfield. The river is confined by steep slopes, ranging from 7 to 15 feet high. The Shawsheen River has been designated by MassDEP as a Class B water body and, as such, is protected as habitat for fish, other aquatic life and wildlife, and for primary and secondary contact recreation. The majority of the surface runoff from Hanscom AFB enters a subterranean system of culverts and drains into the Shawsheen River. Surface runoff from the eastern portion of the base drains eastward into Kiln Brook, which also drains into the Shawsheen River.

The Merrimack River watershed is rated by US EPA as having high vulnerability to water quality problems. In highly vulnerable watersheds, aquatic conditions exist well below state water quality goals. Watershed data suggests significant pollution or other stressors are present; therefore, the watershed has a high vulnerability to decline in aquatic health. Ten-year mean water balance calculations indicate that the surface runoff contribution to the stream flow at the Hanscom sub-watershed is the highest (67 percent of stream flow from surface runoff) among all sub-watersheds in the Shawsheen watershed (MRWC, 2001). Significant watershed concerns identified by the Merrimack River Watershed Council include seasonally low baseflow, flash flooding, and water quality impairment.

In addition, the Shawsheen River is designated as an impaired water body for "Other Habitat Alterations" under Section 303(d) of the Clean Water Act (HAFB 2003b). A total maximum daily load (TMDL) evaluation has been completed by Hanscom AFB, which identifies the condition of the headwaters and specifies reduction in storm water pollutant loads. The watershed that includes the Shawsheen River is highly developed, which has led to contaminants associated with runoff, excessive storm water flow rates, and insufficient stream flow rates. New development projects at Hanscom AFB are required to meet state stormwater management

standards, as well as improve site drainage characteristics, such as recharge and infiltration, to comply with the Clean Water Act.

There have been significant improvements in the storm drainage facilities at Hanscom AFB since 2009. Improvements include annual maintenance checks of catch basins and if needed, flushing of storm drain lines at least every third year. The Base has attempted to reduce runoff to the storm water system and increase infiltration in all construction work. As a matter of general policy, all proposed actions at Hanscom AFB must be designed to result in a net decrease in runoff and an increase in detention and/or groundwater recharge. Since 2009 Hanscom AFB has removed existing shallow sump catch basins and installed hooded deep sump catch basins at 5 locations, re-graded existing lawn areas to create stormwater grass swales and redirected stormwater runoff from existing paved surfaces to the new swales at 3 locations.

6.9.2. Groundwater

Groundwater at Hanscom AFB is fairly shallow, averaging 10 to 20 feet below ground surface (bgs); and is commonly encountered from 3 to 7 feet bgs near wetlands, in the lower elevations of the base, or during periods of seasonally high groundwater elevation. Flow in the upper aquifer is mostly controlled by surface drainage features and storm drainage systems. Groundwater flow in the lower and bedrock aquifers typically follow the topography of the area. In many places, the groundwater contains naturally occurring dissolved iron and manganese that exceed limits for drinking water (HAFB, 1998a). The preferred alternative's site has high ground water.

6.10. Floodplains

The site of the preferred alternative is located within the boundaries of the Town of Lincoln, Massachusetts. An examination of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for the Town of Lincoln indicates that the site is classified as being located in Zone C. Zone C is defined by FEMA to be "Areas of minimal flooding." At the state level, Bordering Land Subject to Flooding (BLSF) is defined by M.G.L.c.131,s.40, under the

Regulations at 310 CMR 10.57(2)(a) 1. and 3. as “...an area with low, flat topography adjacent to and inundated by flood waters rising from creeks, rivers, streams, ponds or lakes. It extends from the banks of these waterways and water bodies; where a bordering vegetated wetland occurs, it extends from said wetland. The boundary of the BLSF is the estimated maximum lateral extent of the flood water which will theoretically result from the statistical 100-year frequency storm. Said boundary shall be that determined by reference to the most recently available flood profile data prepared for the community within which the work is proposed under the National Flood Insurance Program administered by the Federal Emergency Management Agency.” Given that FEMA has classified the sites as being in Zone C, there is no BLSF at the site. Based on this information, construction of a school facility at the site would very likely have no impacts on floodplains either from the Federal or State perspective. (COE, 2005)

6.11. Biological Resources

6.11.1. Vegetation

Most of the land area at Hanscom AFB, along with its native vegetation cover, has been altered by the development of base structures, streets, and recreational areas. For the most part, uplands are dominated by roadways, parking areas, structures, and recreational fields. Remnant grasslands occur in scattered patches and linear strips along developed areas occupying less than 5% of the uplands. Regardless of the context, all of these areas contain vegetation that is typical or representative of species present within the region. (HAFB, 2010a)

The developed areas of the Base are planted with grasses, shrubs, and trees for aesthetic reasons and for erosion control. The soils of the Base are extremely susceptible to erosion when left unprotected. The short turf grasses planted in these areas require extensive care; however, they are essential for minimizing erosion on the Base. The maintenance program provides grass, shrub, and tree planting guidelines and ensures that the exposure of soils (and resulting erosion) will be minimized. Base horticultural practices (e.g., plant selection, fertilization, terracing) have been standardized to achieve optimal growth and planting success. (HAFB, 2010a)

Introduced trees and shrubs are selected on the basis of aesthetics and their adaptability and tolerance to local climate and soils. Ornamental plantings are located throughout the improved portions of the Base. The groomed (mowed) and landscaped areas on-Base include the administrative and Base housing lawns, the athletic fields, and other recreational areas. Current vegetative cover in these areas is dominated by rye, fescue, and bluegrass. Most of these areas are groomed to a height of less than 3 inches. (HAFB, 2010a)

The existing Middle School site is a flat site with landscaped grass, and a mix of native hard and soft wood trees. The site is adjacent to large open space and active play areas on both its eastern and western boundaries. A wetland system including a perennial stream is located along the western boundary of the site. (COE, 2005)

6.11.2. Wetlands

Hanscom AFB contains a diverse network of interconnected wetland systems, occupying approximately 5% of the base (approximately 43 acres). Many of these wetland systems have been subject to the same reconfiguration by human activities which has had a significant impact on the vegetative communities. The remaining wetlands are in various stages of succession, ranging from wet meadows to mature forested swamps.

Hanscom AFB is situated in the Towns of Bedford, Lexington, and Lincoln. The existing middle school site is located in the Lincoln, MA. The Town of Lincoln has its own wetlands bylaw that includes a detailed definition of resource areas. Wetland areas near the existing site classify as wetlands as defined by this bylaw. In Massachusetts, any projects resulting in direct impacts, such as filling, to State and locally defined wetlands resource areas are typically handled through the Conservation Commission of the community in which the project is located. In the case of the proposed action, the Lincoln Conservation Commission would be the applicable local agency and the agency's approval would be required to carry out the proposed action. Also, any proposed work in a buffer zone also has to be brought before the Conservation Commission, even if there are no direct impacts to the wetland resource itself. If the agency agrees to approve

the project, it will issue an Order of Conditions that details various procedures that must be followed in completing the work in the resource area(s). (COE, 2005)

There are two key “buffer zones” associated with these resource areas, a 100 and 200 foot buffer zones. These zones provide further protection of the resource areas. Work within the 100-foot buffer zone must be brought before the Lincoln Conservation Commission and they will issue an Order of Conditions applicable to the proposed work. The Rivers Protection Act established a 200-foot buffer zone. This area extends out 200 feet from a stream’s mean annual high-water line on each side of the stream. It applies only to perennial streams and not to intermittent streams. Similar to the 100-foot buffer zone, the local conservation commission has control over the activities permitted to occur within the area defined by the Act. A key purpose of this Act was to provide unobstructed habitat along the shores of waterways for wildlife to follow. (COE, 2005)

There is only one wetland feature associated with the existing site. It is located along the western boundary of site and extends far beyond the boundaries the site, encompassing a total of approximately 7.6 acres. The wetland system includes a perennial stream (headwaters of the Shawsheen River) along with Bank, Bordering Vegetative Wetlands, and Land Under Water Bodies and Waterways. The presence of these characteristics establishes both the 100-foot buffer zone and the 200-foot-wide Rivers Protection Act zone on each side of the stream. Existing development on the site (the school complex) protrudes into both of these zones. (COE, 2005)

6.11.3. Wildlife

Hanscom AFB lacks continuity of undisturbed areas. While the fragmented nature of the base habitat has created a favorable environment for avian and small mammal species well adapted to humans and development, wildlife abundance and species diversity are relatively low at Hanscom AFB, principally due to extensively developed areas and/or degraded natural habitats. The proposed site does not provide significant habitat for wildlife due to its developed condition, mowing/maintenance activities, and human traffic. Less developed portions located near

wetlands are more suitable for wildlife. These habitat areas, however have been largely subject to reconfiguration by human activities. Due to the level of development of the land on Hanscom AFB, hunting, fishing, and trapping programs are inappropriate. Management concerns for fish and wildlife are essentially limited to wildlife population control and monitoring for the reduction/elimination of current wildlife inhabitants and the appearance of species formally not found on the base. (HAFB, 2010a)

Following a site visit by Massachusetts Department of Fisheries and Wildlife, the Division sent a letter dated April 18, 1996 to the Environmental Manager, concurring that Hanscom AFB be classified as a Category II installation. As a Category II installation, Hanscom AFB is exempt from many of the planning and staffing requirements of the Sikes Act (16 USC 67 a-1[b]). Also, Hanscom is exempt from developing hunting, fishing, or trapping programs. However, the Massachusetts Division of Fisheries and Wildlife stated in their letter that Memoranda of Understanding will be pursued with Hanscom AFB to develop wildlife population control measures, should such a need arise. (HAFB, 2010a)

6.11.4. Threatened or Endangered Species

The Eastern Longhorn Elderberry Beetle (*Desmocerus palliatus*) was a state listed Species of Special Concern. In 2006, however, the state removed this species from the protection list and it is no longer a state threatened species. Nevertheless, Hanscom AFB still takes specific measures establishing “no-cut” areas, signage, and education for personnel in the Grounds Maintenance and Entomology shops to ensure these personnel recognize the importance of protecting the habitat of this species. This species is dependent upon the Elderberry bush as its food source for survival. Preserving areas where elderberry bushes can sustain and improve the beetle population is a long-term goal which has been met by the base and throughout the whole state. Furthermore, this species typically is present within or adjacent to wetlands and the plant is often protected in conjunction with Base efforts to protect wetlands. (HAFB, 2010a)

There are no federally listed or proposed threatened or endangered species at Hanscom AFB. There are, however, two state listed species that have been identified at Hanscom AFB. The Natural Heritage and Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries & Wildlife have identified portions of Hanscom AFB as within *Priority Habitat*, Priority Habitat 300 (PH 300), of the state-listed species, Grasshopper Sparrow, *Ammodramus svannarum*, and the Upland Sandpiper, *Bartramia longicauda*. (HAFB, 2010a)

The Grasshopper Sparrow (*Ammodramus svannarum*), listed as threatened, and Upland Sandpiper (*Bartramia longicauda*), listed as endangered are known to inhabit the grasslands adjacent to the runways on Massport's Hanscom Field and a small portion of the Hanscom FamCamp that abuts the airstrip. Habitat for these two species is almost exclusive to grasslands fields. The small portion of their habitat within the FamCamp should be managed to appropriately restricting mowing during the breeding, nesting, and brooding season between April 15 and August 31. (HAFB, 2010a) These species are not known to inhabit the site of the proposed action.

6.12. Cultural Resources

The Hanscom AFB region contains areas of prominent prehistoric and historic importance. There are hundreds of properties listed in the records of the Massachusetts Historic Commission (MHC) located in the four surrounding towns alone. Hanscom AFB is adjacent to the Minute Man National Historical Park (listed on the National Register of Historic Places) and to the Great Meadows National Wildlife Refuge. In addition, there are other significant places, which served as naturally fortified positions from which the militia fired on the British, located within Hanscom AFB. Four prehistoric archaeological sites are located adjacent to the base, and several small prehistoric sites (temporary camps, chipping stations, and lithic workshops) have been reported in the vicinity of the base. The 1998 Phase I Archaeological Survey, which focused on 34 areas previously identified as having moderate to high potential for archaeological resources, concluded that there are no areas on Hanscom AFB that contain significant prehistoric or archeological resources. Although there are no significant prehistoric sites within Hanscom AFB, a sensitivity map for the Main Base identifies 11 areas of moderate/high sensitivity. Further

surveys to modern standards of these areas will be reviewed and programmed if appropriate. (HAFB, 2010b) The existing Middle School is not within any of these areas.

The existing Middle School was originally constructed in the 1950s and has been modified since that time. In June 2010, Hanscom AFB submitted the results of the May 2010 architectural survey and National Register of Historic Places eligibility evaluation to the Massachusetts Historical Preservation Officer requesting their review and concurrence of the evaluations. The existing school was not one of the properties evaluated and recommended eligible for the National Register. (HAFB, 2010b)

However, because the building was built over fifty years ago, a request for review and comment on the Middle School project was sent to the Massachusetts Historical Commission (MHC) in April of 2011. In May 2011, the MHC responded with a request that Hanscom AFB coordinate with the Minute Man National Historical Park (MMNHP) to consider potential effects on their property with abuts Hanscom AFB. This request for review, comment and coordination with the MMNHP was sent in May 2011. On 5 August 2011, the MMNHP completed their review and concurred that the project will not affect park resources, and that there is no adverse effect. This information was provided to the MHC on 8 August 2011 and it is anticipated that they will concur with the MMNHP that the project will not result in an adverse effect.

6.13. Environmental Restoration Program / Hazardous Waste

6.13.1. Environmental Restoration Program

Hanscom AFB has historically used, generated, and disposed of numerous hazardous substances, including fuel, aromatic solvents, PCBs, and chlorinated solvents. In 1984, environmental studies identified 13 sites, related to past practices at Hanscom AFB, warranting further investigation and potential cleanup through the Installation Restoration Program (IRP), now called the Environmental Restoration Program (ERP). Subsequent discoveries increased the number of sites to 22. Each site was evaluated using the Air Force Hazard Assessment Rating Methodology (HARM), which evaluates potential receptors, waste characteristics, and migration pathways in

order to determine the relative potential of uncontrolled hazardous waste disposal facilities to cause health or environmental damage. HARM scores ranged from 86 (high hazard potential) to 6 (small hazard potential). Of the 22 identified potentially contaminated sites, 8 are still active and are either regulated by the US EPA under CERCLA or by the Commonwealth of Massachusetts. No sites listed in the ERP for Hanscom AFB are located on or near the existing Middle School site.

6.13.2. Hazardous Waste

Hazardous waste generated on the base comes from the normal operation and maintenance activities of the 66 ABG organizations, as well as from the research and development operations at the MIT Lincoln Laboratory and the Air Force Research Library (AFRL). Hazardous wastes, including adhesives, sealants, greases, waste paint and thinners, solvents, and corrosive cleaning compounds are accumulated at initial accumulation points (IAPS), and transferred to the 90-day accumulation site, with final disposal off-base. Hanscom AFB has both a Hazardous Waste Management Plan and a Pollution Prevention Plan which are targeted at reducing the purchases of industrial toxic substances, eliminating the purchase of ozone depleting chemicals, and reducing the amount of hazardous waste disposed. No IAPs are present at the existing school site.

Due to age of facilities at Hanscom AFB, asbestos-containing materials (ACM) are commonly encountered and are estimated to be present in 80% of the buildings. Any ACM in the existing school is managed by the school. The school maintains an inventory of the quantity, condition, and location of ACM in the school. (HAFB, 2004)

Section 7. Environmental Consequences

7.1. Land Use

7.1.1. No-Action Alternative

The no-action alternative would continue operations of the Middle School in the existing facility. The existing site would not need to be altered and land use would not be impacted during the implementation of the no-action alternative.

7.1.2. Alternative 1 - Preferred Alternative – Existing Site

Short-term impacts associated with the replacement of the Middle School at the existing site would include temporary minor disruption of adjacent land uses due to elevated noise levels, increased dust, interference with roadway access, and visual effects. During the demolition and construction phases, there is a temporary need for “swing space” to house the Middle School students and to store equipment (i.e. lay down area) on land designated for community service and outdoor recreation use.

Implementation of the proposed preferred alternative can be expected to have a positive impact to the education program on Hanscom AFB. A new Middle School at the existing location would result in no long term impacts to land use. The area will continue to be designated as Community-Service use.

7.2. Socioeconomic Conditions

7.2.1. No-Action Alternative

The no-action alternative would continue operations of the Middle School at the existing facility. The no-action alternative would result in no change to the current socioeconomic conditions of Hanscom AFB. Employment at the facility would remain constant, environmental justice

populations would not be impacted, and there would be no increase in economic activity in the region.

7.2.2. Alternative 1 - Preferred Alternative – Existing Site

Positive short-term employment benefits will accrue to the construction industry during the construction period as a result of the preferred alternative. Suppliers of equipment and office furniture will also benefit since their products will be needed in the new Middle School. A short-term increase in the revenue generated in the surrounding area may also result due to construction employees utilizing local businesses for supplies and personal use.

There are positive long-term socioeconomic impacts related to the replacement of the Middle School at the existing site. Teachers, administrators, and support personnel at the current Middle School will likely increase to support the expected increase in students. The increase in students will also increase revenue for local food and material suppliers.

Executive Order's 12898 and 13045 mandate that federal agencies identify Environmental Justice issues where disproportionately high and adverse human health or environmental effects on minority and low-income populations, and children may occur. No minority or low-income populations were identified at Hanscom AFB or surrounding area, so the preferred alternative would not disproportionately impact the types of individuals or communities resulting in environmental justice concerns. Extra measures to protect the safety of children during demolition/construction activities while school is in session must be taken. The implementation of the preferred alternative would have both short and long-term beneficial impacts to socio-economics at Hanscom AFB.

7.3. Occupational Safety and Health

7.3.1. No-Action Alternative

The no-action alternative would continue operations of the Middle School at the existing facility. Implementation of the no-action alternative would result in no direct or indirect impact on the safety and health of Air Force employees and others at the site.

7.3.2. Alternative 1 - Preferred Alternative – Existing Site

The preferred alternative would implement occupational safety and health procedures to ensure the safety and health of individuals at the worksite. Implementation of the preferred alternative would result in no direct or indirect impact on the safety and health of Air Force employees and others at the site.

7.4. Utilities

7.4.1. Water Supply

7.4.1.1. No-Action Alternative

The no-action alternative would continue operations of the Middle School at the existing facility. Implementation of the no-action alternative would result in no change to the usage level of existing site's water supply.

7.4.1.2. Alternative 1 - Preferred Alternative – Existing Site

Hanscom AFB is provided potable water by the Town of Lexington, which receives its water from the MWRA. In the short-term, construction of the Middle School at the existing site may require relocation of existing water mains off the two existing water mains feeding the site. Proper dig permitting procedures must be followed during the relocation of water mains. Also, construction and demolition activities may utilize the local water supply for dust control, although this function may alternatively be provided by mobile water tanks filled off-site. The potential use of the local water supply for dust control is not anticipated to have an adverse effect to the water supply at Hanscom AFB.

The preferred alternative is not expected to result in an increase in the demand for water. There is no long-term impact to the water supply system of the Base expected. Additionally, the designers will implement water saving and water conservation technologies into the new building. Implementation of the preferred alternative would not significantly increase the demand for potable water supply at Hanscom AFB.

7.4.2. Wastewater

7.4.2.1. No-Action Alternative

The no-action alternative would continue operations for the Middle School at the existing facility. Implementation of the no-action alternative would result in no change to the wastewater discharge level of existing site utilities.

7.4.2.2. Alternative 1 - Preferred Alternative – Existing Site

No short-term impacts on wastewater facilities are anticipated during the demolition/construction of the Middle School. Portable toilets may be available for the demolition/construction workers, and waste would be transported to an off base treatment facility.

The preferred alternative will not result in an increase in the volume of wastewater pumped from the Base into the connection with the Town of Bedford's sewerage system for treatment by the Massachusetts Water Resources Authority. Although, there will be an increase of students and personnel, water saving and water conservation technologies used in the new school will offset this increase. Construction of the new school would likely require demolition of much of the existing infrastructure in the immediate vicinity of the existing building, but sewage could still be discharge to the collection system in the same general vicinity of the existing sewer connection for the school. It is likely that sewer service from the new building in this area would flow by gravity to the existing systems without the need for an ejector pump/lift station, unless

the design of the new building included sewer services that are lower in elevation than the existing services and mains. (COE, 2005)

7.4.3. Solid Waste

7.4.3.1. No-Action Alternative

The no-action alternative would continue operations for the Middle School at the existing facility. Implementation of the no-action alternative would result in no change to the usage level of existing site solid waste generation rates.

7.4.3.2. Alternative 1 - Preferred Alternative – Existing Site

In the short-term, the preferred alternative would generate solid waste, primarily associated with construction materials. Waste material that is not suitable for reuse or recycling would be disposed of appropriately. All solid waste would be handled in accordance with standard Hanscom AFB procedures. Any hazardous materials would be disposed in accordance with state and federal regulations.

The preferred alternative will may result in a minor increase in solid waste generation in the long term due to the expected increase in students. Improvements in the base recycling policy will reduce this impact. The Middle School represents a very small portion of the base population, therefore the increase would not significantly impact solid waste generation on Hanscom AFB.

7.4.4. Electricity

7.4.4.1. No-Action Alternative

The no-action alternative would continue operations for the Middle School at the existing facility. Implementation of the no-action alternative would result in no change to the electricity usage level.

7.4.4.2. *Alternative 1 - Preferred Alternative – Existing Site*

Short-term disruption of power to the immediate area around the site may occur while electrical connections are made to the new Middle School. The electric load from the proposed new school would not be expected to be significantly greater than that from the existing school. The new school building could be fed in the same manner as the existing school without an upgrade in service. The preferred alternative will not have any impact on the Base electrical system in the long term.

7.4.5. *Telecommunications***7.4.5.1. *No-Action Alternative***

The no-action alternative would continue operations for the Middle School at the existing facility. Implementation of the no-action alternative would result in no change in telecommunications.

7.4.5.2. *Alternative 1 - Preferred Alternative – Existing Site*

Telephone and communication lines would be supplied to the new Middle School. No disruption of telephone/communication service in the immediate area is expected. It is estimated that all new communication requirements will not impact any of the base network because the service will run directly to the school outside the base network.

7.4.6. *Natural Gas***7.4.6.1. *No-Action Alternative***

The no-action alternative would continue operations for the Middle School at the existing facility. Implementation of the no-action alternative would result in no change in natural gas usage on Hansom AFB.

7.4.6.2. *Alternative 1 - Preferred Alternative – Existing Site*

No impacts are expected to occur in the short-term with regard to natural gas on Hanscom AFB. The construction and demolition activities will not require the use of natural gas. Existing natural gas distribution lines will be identified and properly marked to minimize accident potential.

The gas load from the new school building is not anticipated to be significantly greater than the current load. Construction of the new building on this site could be fed from the same or relocated services. The preferred alternative is not anticipated to increase natural gas usage on base and will not have a significant impact on natural gas in the long term.

7.5. *Transportation***7.5.1.1. *No-Action Alternative***

The no-action alternative would continue operations for the Middle School at the existing facility and result in no impacts regarding transportation.

7.5.1.2. *Alternative 1 - Preferred Alternative – Existing Site*

There would be a minimal short-term increase in commercial vehicles on Vandenberg Road and other connecting roadways related to demolition/construction of the Middle School. Personal and commercial vehicles operated by the contractor and subcontractors would be on-site or at areas designated by Hanscom AFB. Personal and commercial vehicles operated by the contractors and subcontractors are not expected to have an adverse impact on the roadways.

After the completion of the preferred alternative, little change in the amount of commuters on base would be anticipated. Most students either walk or ride bikes from base housing to school. There may be a minor increase in children that are dropped off/ picked up by parents or Special Education (SPED) vans because of the increase in students. Overall, the preferred action would result in no significant impact in transportation at Hanscom AFB.

7.6. Noise

7.6.1.1. No-Action Alternative

The no-action alternative would continue operations for the Middle School at the existing facility. Noise levels at the facility would remain constant and there would be no increase in noise levels in the vicinity of the existing site due to facility construction. Noise levels would not be impacted during implementation of the no-action alternative.

7.6.1.2. Alternative 1 - Preferred Alternative – Existing Site

The construction phase of the preferred alternative will create a temporary increase in noise due to construction activities and equipment. Activities include: excavation, grading, paving, boring, and other associated activities, with equipment such as bulldozers, pavers, graders, generators, cranes, and other noise generating heavy equipment. Temporary noise generation during the construction will be coordinated to reduce or eliminate negative noise impacts to concurrent Middle and Primary School activities.

In the long term, the preferred alternative will not generate significant levels of noise. Long-term operation of the facility would have no impact on noise, as the building is consistent with surrounding uses on the base. The noise generated by vehicles arriving and departing from this facility is likely to be lost in the background noise associated with the operation of the Air Force Base.

7.7. Air Quality

7.7.1.1. No-Action Alternative

The no-action alternative would continue operations of the Middle School at the existing facility. Air Quality at the existing facility would remain constant as those associated with vehicular traffic and the minimal stationary source emissions from the building. Air quality would not be impacted during implementation of the no-action alternative.

7.7.1.2. *Alternative 1 - Preferred Alternative – Existing Site*

The preferred alternative may result in short-term localized air quality impacts. All construction vehicles and some equipment would produce emissions that could temporarily affect air quality. The construction activities have the potential to generate fugitive dust. Material loading and transfer (gravel and topsoil), and grading also have the potential to generate fugitive dust. Dust would be controlled onsite by using water to wet down disturbed areas. Moreover, the number of vehicles and the duration of construction required to perform the work is limited. Emissions are therefore not anticipated to cause an adverse impact to regional air quality.

Following the preferred alternative, mobile air emissions sources from automobiles will be unchanged because there will be minimal change in the number of commuters. The new Middle School will continue to be heating from natural gas and the natural gas usage is not anticipated to significantly increase. There are no anticipated long-term air quality impacts related to the preferred alternative.

A General Conformity – Record of Non-Applicability for the preferred alternative was completed (see Section 10). General Conformity under the Clean Air Act, Section 176(c), was evaluated for the preferred alternative according to the requirements of 40 CFR 93, Subpart B. The requirements of this rule are not applicable to the preferred alternative because the total direct and indirect emissions in tons per year (tpy) for the applicable pollutants of concern (i.e., NO_x and VOC) are estimated to be below the conformity threshold values established in 40 CFR 93.153(b).

In addition, the preferred alternative is not considered regionally significant under 40 CFR 93.153(i), as the estimated emissions, using reasonable and conservative assumptions, are significantly less than 10% of the regional emissions. Therefore, a conformity determination is not required.

7.8. Geology and Soils

7.8.1. Geology

7.8.1.1. No-Action Alternative

The no-action alternative would continue operations for the Middle School at the existing facility. There would be no geology impacts in the vicinity of the proposed site due to facility construction. Geology would not be impacted during implementation of the no-action alternative.

7.8.1.2. Alternative 1 - Preferred Alternative – Existing Site

Grading and topography changes may be necessary to design an appropriate drainage system at the site. The preferred alternative's impact to surface topography and geology would be generally minimal because the proposed site has been previously disturbed.

7.8.2. Soils

7.8.2.1. No-Action Alternative

The no-action alternative would continue operations for the Middle School at the existing facility. There would be no soil impacts due to facility construction. Soil would not be impacted during implementation of the no-action alternative.

7.8.2.2. Alternative 1 - Preferred Alternative – Existing Site

The preferred alternative would require the excavation and grading of soils for the construction of the Middle School, parking lot, and surrounding landscape plans. All activities would follow base BMPs regarding minimizing sedimentation and erosion during storm events. Controls would be left in place until vegetation has become established on disturbed soil near the new school, minimizing the impacts on soils. Soils would not be impacted during implementation of the preferred alternative, because the soils were previously disturbed.

7.9. Surface Water and Groundwater

7.9.1. Surface Water

7.9.1.1. No-Action Alternative

The no-action alternative would continue operations for the Middle School at the existing facility. There would be no surface water impacts due to facility construction. Surface water would not be impacted during implementation of the no-action alternative.

7.9.1.2. Alternative 1 - Preferred Alternative – Existing Site

West of the site is a wetland system that includes a perennial stream (headwaters of the Shawsheen River) along with Bank, Bordering Vegetative Wetlands, and Land Under Water Bodies and Waterways. The presence of these characteristics establishes both the 100-foot buffer zone and the 200-foot-wide Rivers Protection Act zone on each side of the stream. Existing development on the site (the school complex) and the temporary swing areas protrudes into both of these zones. The proposed action must be brought before the Lincoln Conservation Commission which will issue an Order of Conditions applicable to the proposed work once approved. Pending approval of the Lincoln Conservation Commission, following the Order of Conditions and Hanscom AFB Best Management Practices (BMP) will greatly reduce any impact to surface water through net decrease in runoff, and increases in detention and groundwater recharge. The new Middle School will be designed to reduce the amount of impervious surface at the Middle School site. In addition, the drainage design would meet both Massachusetts stormwater management standards, as well as comply with Clean Water Act, which would help protect the headwaters of the Shawsheen River. Therefore, it is anticipated that the implementation of the preferred alternative would result in a positive long-term impact to surface water at Hanscom AFB due to the decrease in impervious surface resulting in a decrease of runoff.

7.9.2. Groundwater

7.9.2.1. No-Action Alternative

The no-action alternative would continue operations for the Middle School at the existing facility. There would be no groundwater impacts due to facility construction. Groundwater would not be impacted during implementation of the no-action alternative.

7.9.2.2. Alternative 1 - Preferred Alternative – Existing Site

Given the high groundwater at the preferred alternative's site, there is a strong likelihood that subsurface excavations will encounter groundwater. The construction contractor will be required to include provisions for dewatering. Treatment to reduce suspended solids will be required prior to discharge of construction dewatering. Furthermore, as a matter of general policy at Hanscom AFB, the preferred alternative must be designed to result in a net decrease in runoff and an increase in detention and/or groundwater recharge. This would result in a positive impact to groundwater at Hanscom AFB.

7.10. Floodplains

7.10.1.1. No-Action Alternative

There are no floodplain issues if the no-action alternative was taken.

7.10.1.2. Alternative 1 - Preferred Alternative – Existing Site

Given that FEMA has classified the preferred alternative as being in Zone C, there is no Bordering Land Subject to Flooding (BLSF) at the site. Based on this information, construction of a school facility at the site would have no impacts on floodplains either from the Federal or State perspective.

7.11. Biological Resources

7.11.1. Vegetation

7.11.1.1. No-Action Alternative

The no-action alternative would continue operations for the Middle School at the existing facility. There would be no modification to the building at the existing site, so vegetation would not be impacted during implementation of the no-action alternative.

7.11.1.2. Alternative 1 - Preferred Alternative – Existing Site

The existing Middle School site is a flat site with landscaped grass, and a mix of native hard and soft wood trees. Work activities will be limited to developed portions of the property. Any trees that must be removed will be replaced by suitable trees in other locations on the site. The remaining mature trees will have protective barriers placed around them to minimize the potential for damage. Smaller trees and shrubs may be cleared incidental to other demolition activities. Existing grassy vegetation is likely to be disturbed by track-mounted construction equipment. Disturbance to the existing grassy area to be used for “swing space” to temporarily house the Middle School students during construction would also occur. The short-term loss of some vegetation is not anticipated to substantially impact the biological community on, or in the vicinity of, the preferred alternative site. Once the preferred alternative is completed, the replacement of grass, trees and shrubs would occur.

7.11.2. Wetlands

7.11.2.1. No-Action Alternative

The no-action alternative would continue operations for the Middle School at the existing facility. The existing site is surrounded by a network of wetlands; however, there would be no modification to the building at the existing site, so wetlands would not be impacted during implementation of the no-action alternative.

7.11.2.2. Alternative 1 - Preferred Alternative – Existing Site

As mentioned in Section 4.8.1 Surface Water, the existing site is located within both the 100-foot buffer zone and the 200-foot-wide Rivers Protection Act zone. The preferred alternative must be brought before the Lincoln Conservation Commission. Pending approval of the Lincoln Conservation Commission, following the Order of Conditions and Hanscom AFB Best Management Practices (BMP) will result in the net decrease in runoff, and increase in detention and groundwater recharge. The drainage design would also meet Massachusetts stormwater management standards and comply with the Clean Water Act, which would help protect the headwaters of the Shawsheen River. In addition, the Shawsheen River is an “Impaired Waterway” that requires compliance with federal regulations that are delegated to the Mass DEP. Additional improvement in post construction flow rates would be required so that they do not exceed pre construction flow rates.(HAFB, 2010f) Therefore, it is anticipated that the implementation of the preferred alternative would result in a positive impact to wetlands at Hanscom AFB.

7.11.3. Wildlife

7.11.3.1. No-Action Alternative

The no-action alternative would continue operations for the Middle School at the existing facility. There would be no modification to the building or surrounding area at the existing site, so wildlife would not be impacted during implementation of the no-action alternative.

7.11.3.2. Alternative 1 - Preferred Alternative – Existing Site

Construction of the proposed facility at this location would not impact wildlife in the area because the proposed site consists of the existing Middle School, pavement, and mowed lawn, which does not provide a significant habitat for wildlife in its managed condition. The implementation of this alternative would have no impact on wildlife or wildlife habitat.

7.11.4. Threatened or Endangered Species

7.11.4.1. No-Action Alternative

The no-action alternative would continue operations for the Middle School at the existing facility. The no-action alternative would not impact threatened or endangered species on Hanscom AFB.

7.11.4.2. Alternative 1 - Preferred Alternative – Existing Site

There are no federally listed or proposed threatened or endangered species at Hanscom AFB. The state-listed species Grasshopper Sparrow, *Ammodramus svannarum*, and the Upland Sandpiper, *Bartramia longicauda* have been identified in portions of Hanscom AFB, but not near the existing Middle School site.

The eastern longhorn elderberry beetle (*Desmocerus palliatus*), which was previously listed on the State's Species of Special Concern list, and its main food source, elderberry bush, are typically present within or adjacent to wetlands. Following the Order of Conditions and Hanscom AFB Best Management Practices (BMP) to protect wetlands would minimize any impact to elderberry bushes and the beetle population if they are present near the site. The preferred alternative would not impact threatened or endangered species on Hanscom AFB.

7.12. Cultural Resources

7.12.1.1. No-Action Alternative

The no-action alternative would continue operations for the Middle School at the existing facility. Implementation of the no-action alternative would not impact cultural resources.

7.12.1.2. Alternative 1 - Preferred Alternative – Existing Site

The existing site of the Middle School was not identified on the sensitivity map for the main base as one of the 11 areas of moderate/high sensitivity. Also, the existing school was not one of the properties evaluated and recommended eligible for the National Register. The existing building was built in 1958, so coordination with the Massachusetts Historical Preservation Officer is required. A request for review and comment on the Middle School project was sent to the Massachusetts Historical Commission (MHC) in April of 2011. In May 2011, the MHC responded with a request that Hanscom AFB coordinate with the Minute Man National Historical Park (MMNHP) to consider potential effects on their property with abuts Hanscom AFB. This request for review, comment and coordination with the MMNHP was sent in May 2011. On 5 August 2011, the MMNHP completed their review and coordination and concurred that the project will not affect park resources and that there is no adverse effect. This information was provided to the MHC on 9 August 2011. Although it is anticipated that they will concur with the MMNHP, that the project will not result in an adverse effect, coordination with the MHC will continue until it is confirmed.

7.13. Environmental Restoration Program / Hazardous Waste***7.13.1. Environmental Restoration Program******7.13.1.1. No-Action Alternative***

The no-action alternative would continue operations for the Middle School at the existing facility. No sites listed in the ERP for Hanscom AFB are located on or near the existing Middle School site. The no-action alternative would not directly impact nor impede monitoring of any active ERP sites.

7.13.1.2. Alternative 1 - Preferred Alternative – Existing Site

The preferred alternative would continue operations for the Middle School at the existing site. No sites listed in the ERP for Hanscom AFB are located on or near the existing Middle School site. The preferred alternative would not directly impact nor impede monitoring of any active ERP sites on Hanscom AFB.

7.13.2. Hazardous Waste

7.13.2.1. No-Action Alternative

The no-action alternative would continue operations for the Middle School at the existing facility and would not impact hazardous waste on Hanscom AFB.

7.13.2.2. Alternative 1 - Preferred Alternative – Existing Site

The preferred alternative is not located in the vicinity or down gradient from any known hazardous waste sites. During construction, hazardous materials and waste would likely be used and generated, including: equipment fuel, engine oil, hydraulic oil, grease, and other equipment operation and maintenance material. Any hazardous materials used during construction would be used, stored, transported, and disposed in accordance with base, military, state, and federal regulations.

Hanscom AFB has a Pollution Prevention Plan which prohibits the use of all Class I ozone-depleting chemicals, and directs organizations to minimize the use of Class II ozone-depleting chemicals and toxic substances. Consequently, hazardous waste generation is anticipated to be reduced to the maximum extent possible during operation of the new facility. It is not anticipated that soil or groundwater contamination would occur as a result of operating the new facility. Any construction and demolition debris will be segregated from hazardous materials requiring special disposal in accordance with federal and state regulation, as well as Hanscom AFB policies. No adverse impacts resulting from construction or demolition are anticipated.

Removal of asbestos containing material (ACM) must be done by a licensed asbestos contractor. Additionally, full containment and a licensed project monitor may be required. The asbestos contractor must comply with all state and federal regulations. Overall, the following of all local, state, and federal regulations would result in no adverse impact in regards to hazardous wastes on Hanscom AFB.

7.14. Cumulative Impacts

Cumulative impacts are those changes to the physical, biological, and socioeconomic environments that would result from the combination of construction, operation, and associated impacts of the preferred alternative when added to other past, present, and reasonably foreseeable actions. The development projects discussed below may have the potential to result in additive or multiplicative impacts to resources when evaluated together with the proposed action.

Hanscom AFB developed an EA and a Finding of No Significant Impact (FONSI) in April 2008 for a new Acquisition Management Facility (AMF) (Building 1604). The construction of the AMF building was completed in 2009 and Building 1600 is planned to be demolished in the future. Completion of this project would not impact socio-economics, transportation, noise, cultural resources, or the environmental restoration program at the base, as the personnel for this activity already exist at the base. All new construction additions have the potential to increase air emissions and impact utilities on the base. The commissioning of the new AMF building in combination with demolition of the existing building, however, would increase the overall efficiency of building and result in no net impact. The AMF building was designed with LEED principles and the proposed drainage system was designed in accordance with Hanscom AFB's drainage requirements. There are no anticipated significant impacts when evaluated together with the preferred alternative.

In 2009, an EA was developed for the construction of the Massachusetts Army National Guard (MANG) Joint Force HQ Building at Hanscom AFB. A Finding of No Significant Impact (FONSI) was signed in January 2010. Construction began in 2010 and is anticipated to last 28 months. No significant impacts to aerospace, socioeconomic/environmental justice, noise, climate change, geology and soils, floodplains, or the environmental restoration program/hazardous waste were identified in the EA. The action requires land use to change from outdoor recreation to administrative. The minor increase in base population would cause minor

increases in demands on the water supply, wastewater, electrical, telecommunications, and natural gas systems. Short term increases in solid waste during construction would be minor because reusable/recycled material would be utilized, as well as efficient building technologies that are incorporated into the building design. Traffic congestion is estimated to increase and traffic demand management (TDM) strategies are planned to be implemented. Construction-related air quality short-term impacts are anticipated. Five natural-gas fired heating units and one natural gas-fired emergency generator would be installed. The project is not considered regionally significant because the project emissions are calculated to be less than 10 percent of the regional emissions and would not impact the area's air quality. No surface waters are located on the site, although a drainage swale is located to the west of the site. Construction activities would be conducted in accordance with applicable BMPs to avoid impacts to nearby Shawsheen River. There are no anticipated significant impacts when evaluated together with the preferred alternative.

Also in 2010, an EA and FONSI were developed for the addition of a Mental Health Clinic to the existing base clinic, Building 1900. If this action was to occur, no significant impacts associated with the land use, socioeconomics, transportation, noise, air quality, geology/soils, surface water and groundwater, biological resources, or cultural resources would be anticipated. However, minor impacts may occur in the short-term. The construction, demolition and site restoration activities have potential to affect adjacent land uses due to elevated noise levels, increased dust, minor interferences with roadway access, and visual effects. The construction of the Mental Health Clinic Addition and the associated reconfiguration of the parking lot would create construction and demolition debris, and may cause minor soil and groundwater disturbance. A short-term loss of some vegetation is not anticipated to substantially impact the biological community on, or in the vicinity of the site. Construction has not been funded, so the start of the project is undetermined. There are no anticipated significant impacts when evaluated together with the preferred alternative.

Section 8. Measures To Reduce Potential For Impact

While some impacts to the natural and human environment may occur during construction of the preferred alternative and/or daily operations within the new Middle School, these impacts are minor and are not atypical compared with other routine construction projects. Commonly applied Best Management Practices and other measures identified below further reduce the likelihood that these activities would have a significant impact on the environment.

Parameter:	BMP or Other Measure to Reduce Impact:
Land Use	A phased construction schedule will be implemented to reduce peak traffic/noise levels and thus minimize disruption to nearby land uses.
Transportation	Transportation of heavy trucks would only be allowed during normal business hours to avoid the disturbance of surrounding residential areas.
Utilities	Existing utility alignments will be identified through markings (similar to “Dig Safe”) prior to any excavation to prevent damage to existing infrastructure. Implementation of LEED technologies is expected to reduce consumption of water and electricity, and the modern efficient building design is expected to reduce heating/cooling requirements. New construction must comply with Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings and Executive Order 13514.
Solid Waste	Solid waste management would be in compliance with Hanscom AFB recycling policies to minimize the amount of solid waste disposed without beneficial reuse during demolition, construction, and operation of new facility.
Air Quality	All equipment and vehicles used during construction would be maintained in good operating condition so that exhaust emissions are minimized. Dust will be controlled on-site by using water to wet down disturbed areas.
Surface Water	During construction, silt fence and/or hay bales will be placed around catch basins to reduce potential for sediment/eroded materials to be transported to the Shawsheen River via the storm sewers. The facility’s stormwater management will reduce peak flow rates from the parcel to the Shawsheen River. Drainage design must meet both Massachusetts stormwater management standards and comply with Clean Water Act.
Wetlands	Approval of the Lincoln Conservation Commission and the following the Order of Conditions is required.
Groundwater	If dewatering is necessary during construction, the water will be treated for total suspended solids (TSS) removal prior to discharge to receiving water. Upon completion, the facility’s stormwater management system will retain stormwater allowing for a greater rate of infiltration to groundwater.

Parameter:	BMP or Other Measure to Reduce Impact:
Vegetation	The landscape plan for the new building would emphasize native shrub/tree species, and existing vegetation on the site would be left intact during construction.
Cultural Resources	Due to the age of the existing school, coordination with the Massachusetts Historical Preservation Officer is necessary. If resources are inadvertently discovered during the project duration the site Project Manager will immediately notify the Hanscom AFB Cultural Resources Manager and cease work in the area of the discovery.
Hazardous Waste	All hazardous materials used or encountered during construction, demolition, or operation would be handled and disposed in accordance with Hanscom AFB policies and protocols and all applicable state and federal regulations. Removal of asbestos containing building materials (ACBM) must be done by a licensed asbestos contractor. Additionally, full containment and a licensed project monitor may be required. The asbestos abatement contractor must comply with all state and federal regulations.

Section 9. Consultation Letters, Emails, and Public Notice

9.1. Letter to Minute Man National Historical Park, 24 May 2011



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 66th AIR BASE GROUP (AFMG)
HANSCOM AIR FORCE BASE MASSACHUSETTS

Mr. Donald C. Morris, PE
66 ABG/CEV
120 Grenier Street
Hanscom AFB, MA 01731-1910

24 May 2011

Ms. Nancy Nelson, Superintendent
Minute Man National Historical Park
174 Liberty Street
Concord, MA. 01742

Dear Nancy,

There are currently two public school facilities on Hanscom AFB. The Hanscom Primary School is housed in a facility of approximately 53,000 sq. ft. and the Hanscom Middle School is housed in a facility of approximately 59,000 sq. ft. Both of these facilities are leased to and operated by the Lincoln Public School system, under contract with the Department of Defense Education Activity.

Hanscom Primary and Middle Schools are one story masonry veneer buildings originally constructed in 1958 with multiple subsequent additions. A major renovation addition to the Primary School occurred in 1988. Hanscom Primary School serves grades from K through 3rd. Hanscom Middle School houses students in grades 4th through 8th. Currently they share a Gymnasium, a 7,700 sq. ft. building originally constructed in 1965.

The May 2004 Site Suitability Analysis determined these facilities exhibited deterioration of exterior wall finishes, roofing, finishes, and mechanical, plumbing and electrical systems anticipated for buildings of this age. Utilizing Department of Defense guidelines, facility condition indices and modified recapitalization measures, both facilities should be considered for replacement. However, the Primary School is considered to be in better overall condition due to the major renovation that was completed in 1988. Based on this analysis the Middle School, constructed in 1958 is recommended for replacement.

The Site Suitability Analysis collected site data, reviewed technical literature, performed site inspections, and engaged the Base representatives in discussions to evaluate the suitability of three alternative sites (attach 1). The results of the site evaluation reveal the highest-ranked, or most suitable option, to be Site C (attach 2), which is the existing Hanscom Primary and Middle School site.

The facility was surveyed and evaluated for National Register eligibility in 2003 by the Public Archeology Laboratory. This evaluation determined that both the Hanscom Primary School and the Hanscom Middle School are not eligible (attach 3) for listing on the National Register. In May 2011, the Massachusetts Historical Commission (MHC) (attach 4) requested that I coordinate with the Minute Man National Historical Park in regards to this proposal. To further assist in your review, recent photographs (attach 5) of the interior and exterior of the Middle School are included.

(PRIVACY ACT OF 1974 APPLIES)

This demolition is unlikely to affect significant historic or archaeological assets of the Commonwealth. Although this project is a considerable distance (approximately 2500 ft.) and not visible from the Minute Man National Historical Park (MMNHP) we must consider any potential effects of this proposal on nearby historic resources. I respectfully request your review and comments on the proposed demolition. Please contact me at 781-377-2475 or at donald.morris@hanscom.af.mil if you require additional information.

Sincerely,



DONALD C. MORRIS, PE
Cultural Resources Manager

Attachments:

1. Site Analysis
2. Proposed Demolition
3. HAFB Architectural Building & Inventory Survey Excerpt
4. MHC Memo May 10, 2011
5. Photographs

9.2. Email from Minute Man National Park, 5 August 2011

From: Lou_Sideris@nps.gov
Sent: Friday, August 05, 2011 1:21 PM
To: Morris, Donald Civ USAF AFMC 66 ABG/CEG; Cravedi, Joyce; Cravedi, Greg
Civ USAF AFMC 66 ABG/CEG; Nancy_Nelson@nps.gov
Subject: Hanscom Middle School -- Coordination w/NPS

We have reviewed the map and other materials you have sent in reference to the Hanscom Middle School Project on Market Road in Hanscom Air Force Base. Because the project is not visible from Minute Man National Historical Park and will not affect park resources we have determined that there is no adverse effect to the park.

Thank you for your consideration,
Lou Sideris

Lou Sideris
Chief of Planning and Communications
Minute Man National Historical Park
174 Liberty Street
Concord, MA 01742
978-318-7833
Lou_Sideris@nps.gov

9.3. Concurrence From Massachusetts Historical Commission, 23 August 2011

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 66th AIR BASE GROUP (AFMC)
HANSCOM AIR FORCE BASE MASSACHUSETTS

RECEIVED

AUG 10 2011

MASS. HIST. COMM

50470

Mr. Donald C. Morris, PE
66 ABG/CEV
120 Grenier Street
Hanscom AFB, MA 01731-1910

9 August 2011

Ms. Brona Simon
Commonwealth of Massachusetts
Executive Director
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, MA 02125

Dear Ms. Simon

In April 2011, I initiated coordination in regards to our project to replace the Hanscom Middle School which was constructed in 1958. In May 2011 you requested that I coordinate the project with the Minute Man National Historical Park (MMNHP) and consider the potential effects of this project on the historic resources in the project vicinity.

I have provided a copy of the completed coordination with the MMNHP. Their review of the reference materials and the site was completed on 5 August. They concur that the project will not affect park resources and that there is no adverse effect.

Based on this evaluation from the MMNHP I respectfully request your concurrence on the proposed Hanscom AFB Middle School project. Please contact me at 781-377-2475 or at donald.morris@hanscom.af.mil if you require additional information.

CONCURRENCE: *Brona Simon*
8/23/11
BRONA SIMON
STATE HISTORIC
PRESERVATION OFFICER
MASSACHUSETTS
HISTORICAL COMMISSION

Sincerely,

DONALD C. MORRIS, PE
Cultural Resources Manager

Attachment: Memo (email) from Lou Sideris, MMNHP

9.4. Public Notice Printed in Local Newspapers, 11 August 2011

The Department of the Air Force Invites Public Comments
On Its Environmental Assessment for the Replacement of the Hanscom AFB Middle School

The United States Air Force announces the availability of a Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for the proposed replacement of the Hanscom Air Force Base (AFB) Middle School.

Hanscom AFB proposes to replace the existing Hanscom Middle School. The proposed action includes the construction of a 85,000SF, two story building along with associated site improvements, including paving, parking, and utilities to accommodate 310 students from 4th through 8th grade.

The project site location contains the existing Middle School along with the existing Primary School. Shared spaces, like cafeteria seating and the central receiving area, will need to remain operational until the new school is brought on line. This creates the need for phased construction. Phased building demolition of the existing Middle School would be required in order to accommodate both the new construction and ongoing school operations. Also, temporary swing space facilities would be required during construction and deconstructed after completion of the proposed action. Facilities would be designed in accordance with DoDEA Education Facilities Specifications, Americans with Disabilities Act Accessibility (ADA) Guidelines, National Fire Protection Association Life Safety Code, Standards of Seismic Safety for Federally Owned Buildings, and Energy and Water Conservation Standards. Sustainable design would be integrated into the design in accordance with Leadership in Energy and Environmental Design (LEED) for Schools Silver criteria.

Copies of the Draft EA/FONSI are available for inspection at the main public libraries in Bedford, Concord, Lexington, and Lincoln, and at the Hanscom AFB Environmental Office, Building 1825, at 72 Dow Street. If you have any questions concerning the Draft EA/FONSI, please contact the Environmental Office at Hanscom AFB at 781-377-2475. Written comments on the Draft EA/FONSI will be received until September 9, 2010 and may be mailed to Donald Morris, 66 ABG/CEV, 72 Dow Street, Hanscom AFB, MA 01731 or emailed to Donald.Morris@hanscom.af.mil.

Section 10. General Conformity – Record of Non-Applicability

GENERAL CONFORMITY - RECORD OF NON-APPLICABILITY

Project / Action Name:	Hanscom Air Force Base – Replace Hanscom Middle School
Project / Action Point of Contact	
Begin Date: 12/2012	End Date: January 2015

General Conformity under the Clean Air Act, Section 176(c), has been evaluated for the project described above according to the requirements of 40 CFR 93, Subpart B. The requirements of this rule are not applicable to this proposed project/action because the total direct and indirect emissions in tons per year (tpy) for the applicable pollutants of concern (i.e., NO_x and VOC) for the year showing the highest emissions have been estimated to be:

2013 Emission Summary	VOC (tpy)	NO _x (tpy)
Construction Phase	0.604	2.906
Operational Phase	0	0
TOTAL	0.604	2.906

These emission rates are below the conformity threshold values established in 40 CFR 93.153(b) of:

Conformity Threshold Rate:	
VOC	50 tpy
NO _x	100 tpy

In addition, the project/action is not considered regionally significant under 40 CFR 93.153(i), as the estimated emissions, using reasonable and conservative assumptions, are significantly less than 10% of the regional emissions. Therefore, a conformity determination is not required.

Supporting documentation and emissions estimates for the project/action (i.e., construction/renovation and operational phases) are attached and included in the NEPA documentation.

Signed: _____

Date: _____

SUPPORTING DOCUMENTATION

Description of Project / Action:

Hanscom Air Force Base (AFB) proposes to replace the existing Hanscom Middle School. The proposed action includes the construction of a 85,000 SF, two story building along with associated site improvements, including paving, parking, and utilities to accommodate 310 students from 4th through 8th grade. The project site location contains the existing Middle School along with the existing Primary School. Shared spaces, like cafeteria seating and the central receiving area, will need to remain operational until the new school is brought on line. This creates the need for phased construction. Phased building demolition of the existing Middle School would also be required in order to accommodate both the new construction and ongoing school operations. Also, temporary swing space facilities would be required during construction and deconstructed after completion of the proposed action.

Methodology:

The General Conformity Applicability Analysis was conducted using the methodology outlined in the appropriate Department of Defense general conformity guidance documents (USAF, 2003). A record of Non-Applicability (RONA) was prepared since the NOx and VOC emissions are less than the General Conformity *de minimus* thresholds and are not considered to be regionally significant.

Calculations were performed using an excel spreadsheet that used EPA approved emission factors (USEPA, 1991). The spreadsheet quantified emissions from site clearing and grading, paving and heavy equipment used for all related construction activities, and POVs used to transport workers to/from the site for the estimated duration of the project (including temporary construction facilities and swing space). Emissions from the proposed stationary sources were quantified by using net increase in emissions over conditions at the existing middle school. This was performed by using an Excel spreadsheet utilizing information from the aforementioned EPA document, as well as from EPA's AP42 emission factor document (USEPA, 1995).

Since the new Middle School will be a direct replacement of the existing Middle school, Vehicle Miles travelled by staff and students commuting to/from this facility are assumed to remain consistent with current levels, thus no increase in emissions from this source is anticipated from this project.

Input Parameters and Assumptions:

Project-specific parameters were used or assumed for the proposed project. Although the exact means and methods of construction would be the responsibility of the contractor, it was necessary to make certain assumptions, such as the quantity and type of construction vehicles, to estimate emissions. When possible, conservative assumptions were made. Heavy equipment usage is assumed to peak in 2013 during demolition and site work and be reduced by at least 30% during 2014.

Construction Activities:

The entire project area would be 16.7 acres including the area currently occupied by the middle and primary schools. The construction project duration was assumed to be 24 months in duration (Ewing Cole, 2011). Construction is assumed to begin in January 2013 and be completed by January 2015. Other parameters and assumptions were made for the following related activities:

Heavy Construction Equipment

This includes emissions from heavy construction equipment involved in site construction activities, such as grading and soil movement, debris hauling, asphalt paving and concrete pouring. Although estimation is required, estimates of type and number of equipment is conservative based on the most intensive activity taking place in 2013 during demolition and site work, and a reduction in use of heavy equipment during 2014 with no usage of heavy equipment in 2015.

Construction Employee Travel

It was estimated that an average of 20 contractors would be required to be on-site every day, five days a week, 52 weeks per year from 2013 - 2015 to complete the project. To obtain worst case emissions, no carpooling or public transportation was assumed (i.e., every contractor drove individual POV). It was assumed that half of the contractors drove gasoline engine passenger vehicles, while the other half drove gasoline engine trucks (GVW >6,000 lbs).

Operational Activities:Stationary Emission Sources

New boilers are assumed to be of a similar number and configuration as existing. The new building will be 85,000 sq. ft while the existing is 51,659 sq. ft (Ewing Cole, 2011). All existing and new units run on natural gas. To obtain worst case emissions, no low NOx controls were assumed. Calculated emissions from the existing middle school are subtracted from calculated emissions from the new middle school building to yield net increase of emissions. Actual natural gas usage from 2011 is used to calculate existing emissions, emissions from the new school assume a 65% increase in floor space and an 85% heating efficiency of natural gas fired equipment. 2011 gas usage is multiplied by 1.75 to account for the increased space being heated. For 2013, gas usage is assumed to remain constant since the new school will be under construction and temporary facilities will be utilized with reduced square footage. For 2014, natural gas usage in the new school as well as 50% usage from the old school will accommodate swing space and shared facilities with the primary school. This approach is considered to be conservative.

Results:

Estimated Calculations Based on the estimated VOC and NO_x emissions, using conservative and reasonable assumptions, the total project emissions are well below the regulatory thresholds of 50 tpy and 100 tpy, respectively.

Year	Phase	Emissions				
		VOC	NO _x	CO	SO ₂	PM
2013	Construction	0.604	2.906	9.460	1.163	2.370
	Operational (net)	0.000	0.000	0.000	0.000	0.000
	Total 2013 Emissions	0.604	2.906	9.460	1.163	2.370
2014	Construction	0.440	1.750	8.538	0.667	2.054
	Operational (net)	0.002	0.039	0.033	0.000	0.003
	Total 2014 Emissions	0.442	1.789	8.571	0.667	2.057
2015	Construction	0.000	0.000	0.000	0.000	0.000
	Operational (net)	0.001	0.024	0.019	0.000	0.002
	Total 2015 Emissions	0.001	0.024	0.019	0.000	0.002

Emissions will be highest during calendar year 2013; therefore, those emissions were reported in the Record of Non-Applicability and compared to the general conformity annual thresholds.

Regional Significance

An action is regionally significant if the total direct and indirect emissions of an individual pollutant amount to 10 percent or more of the non-attainment area emissions of that pollutant. Table E1-1 of the Commonwealth of Massachusetts State Implementation Plan (SIP) for the ozone non-attainment area (MADEP, 2008) shows the total area-wide emissions to be as follows:

VOC 540.3 tons/day

NO_x 475.2 tons/day

The total emissions from the project were estimated to be significantly less than 10 percent of the area-wide emissions as described in the applicable SIP.

References:

Massachusetts Department of Environmental Protection (MADEP). Final Massachusetts State Implementation Plan to Demonstrate Attainment of the National Ambient Air Quality Standard for Ozone. Jan 31 2008.

U.S. Air Force (USAF). IERA Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installation, May 1999, Revised December 2003, Section 4.

USAF. Memorandum for ALMAJCOM/CEVs, HQ USAFA/CEV, 11th WG/CEV. Subject: Air Conformity Guide. 26 August. 2003.

US Army Center for Health Promotion and Preventative Medicine (USACHPPM) Dempsey, Judith; Polyak, Lisa; Tushek, Stephen. Technical Guide for Preparing a Record of Nonapplicability for the General Conformity Rule. November 2003.

USEPA. AP 42, Fifth Edition. *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*. Sections 1.3, 1.4, 3.2 January 1995. <http://www.epa.gov/ttn/chief/ap42/>

Section 11. List of Preparers

The Environmental Office (66ABG/CEV) prepared this document to fulfill the requirements of the National Environmental Policy Act (NEPA) for the proposed action to replace the Hanscom Middle School at the existing Middle School site. The following persons authored and provided direct oversight for the preparation of this environmental assessment:

MANAGEMENT

Donald C. Morris, P.E., 66 ABG/CE. B.S. in Civil Engineering; As the Environmental Director, provided technical review and oversight for preparation of this environmental assessment.

TASK LEADER

Maravelias, James. Portage, Inc. A.L.M in Sustainability and Environmental Management; As a Senior Project Scientist with broad experience in the management and regulation of hazardous waste and the U.S. Air Force Environmental Impact Analysis Process (EIAP), managed the preparation and was the primary author of this environmental assessment.

QUALITY ASSURANCE LEADER

Cravedi, Gregory. 66 ABG/CE. B.S. in Management; As an Environmental Protection Specialist, assisted in historical research, site assessment, and provided technical review of this environmental assessment.

CONTRIBUTING AUTHORS

Best, Thomas. 66 ABG/CE. B.S. in Civil Engineering; As the Environmental Restoration Program manager, assisted in historical research and site assessment for this environmental assessment.

Campbell, Ian. Portage, Inc. B.S. in Environmental Studies; As a Senior Project Scientist with broad experience in environmental compliance and air quality permitting, provided input to selected sections of this environmental assessment.

Grudziecki, Nicholas. 66 ABG/CEV. B.S. in Business Administration pending; As an Environmental Engineering Assistant, reviewed the environmental assessment for accuracy and completeness.

Spelfogel, Robert. 66 ABG/CE. M.S. in Environmental Engineering; As the Environmental Compliance Program Manager, assisted in review of various environmental protocols for this environmental assessment.

Section 12. References

Army Corps of Engineers (COE), 2005. Hanscom AFB Massachusetts: Educational Facilities Site Suitability Analysis. Prepared by Baker and Defense. September 2005.

Commonwealth of Massachusetts: Executive Office of Environmental Affairs (EOEA). 2001. Accessed at <http://appraisercentral.com/st/Bedford-Zoning.pdf>.

Council on Environmental Quality (CEQ), 1978. Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act. 40 CFR Parts 1500-1508. November 28, 1978 (and as updated through July 1, 1998).

Federal Emergency Management Agency (FEMA). 2008. Map Service Center accessed at <http://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1>

Hanscom AFB (HAFB). 1998a. General Plan – Hanscom Air Force Base. Prepared by Michael Baker Jr, Inc. October 1998.

Hanscom AFB (HAFB). 1998b. Phase I Archeological Survey, Hanscom Air Force Base, Massachusetts. Prepared by Parsons Engineering Science, Inc. August 1998.

Hanscom AFB (HAFB). 2003a. General Plan Update – Hanscom Air Force Base. Prepared by Parsons Brinckerhoff Quade & Douglas, Inc. November 2003.

Hanscom AFB (HAFB). 2003b. Draft Storm Water Pollutant Total Maximum Daily Load for Headwaters of the Shawsheen River. Prepared by Merrimack River Watershed Council. June 2003.

Hanscom AFB (HAFB). 2004. Facility Condition Assessment: Hanscom AFB Schools. Prepared by Michael Baker Jr., Inc. 26 July, 2004.

Hanscom AFB (HAFB). 2009. Fact Sheet – Hanscom AFB; RE: economic impact on the surrounding community. Accessed at <http://www.hanscom.af.mil/library/factsheets/factsheet.asp?id=7493>

Hanscom AFB (HAFB). 2010a. Integrated Natural Resources Management Plan for Hanscom Air Force Base – Draft. Prepared by Hanscom AFB Environmental Management Office. 18 May 2010.

Hanscom AFB (HAFB). 2010b. Integrated Cultural Resources Management Plan – Hanscom Air Force Base. Prepared by John Milner Associates, Inc. December 2010.

Hanscom AFB (HAFB). 2010c. Personal communication between Ian Campbell, Portage, Inc., and J. Maravelias, Portage, Inc., regarding air quality, steam, and natural gas, December 28, 2010.

Hanscom AFB (HAFB). 2010d. Personal communication between Ivan Louis-Letarj, IAP Worldwide Services (Hanscom AFB's Civil Engineering support contractor) and J. Maravelias, Portage, Inc., regarding electricity usage, March 18, 2010.

Hanscom AFB (HAFB). 2010e. Personal communication between Tom Best, Environmental Restoration Program manager(Hanscom AFB Base Civil Engineer Government Office (GO)) and J. Maravelias, Portage, Inc., regarding the Installation Restoration Program, March 19, 2010.

Hanscom AFB (HAFB). 2010f. Replace Hanscom Middle Scholl: Hanscom AFB, Massachusetts: Planning Charrette Report. Prepared by Ewing Cole. 15 November, 2010.

Hanscom AFB (HAFB). 2010g. 2009 Solid Waste Facility Report – Hanscom AFB. 12 February 2010.

Hanscom AFB (HAFB). 2011. Personal communication between Ken Lampman, Distribution Engineer, and J. Maravelias, Portage, Inc. regarding telecommunications, January 5, 2011.

Massachusetts Department of Environmental Protection (MassDEP). 2007. Commonwealth of Massachusetts – 2006 Air Quality Report. July 2007.

Merrimack River Watershed Council (MRWC). 2001. A Report on Hanscom Stormwater System Computer Model – Model Development and Calibration. June 2001.

US Air Force (USAF). 1995. Environmental Impact Analysis Process (EIAP). Federal Register. Vol. 60, p. 4545. 32 CFR Part 989. January 24, 1995.